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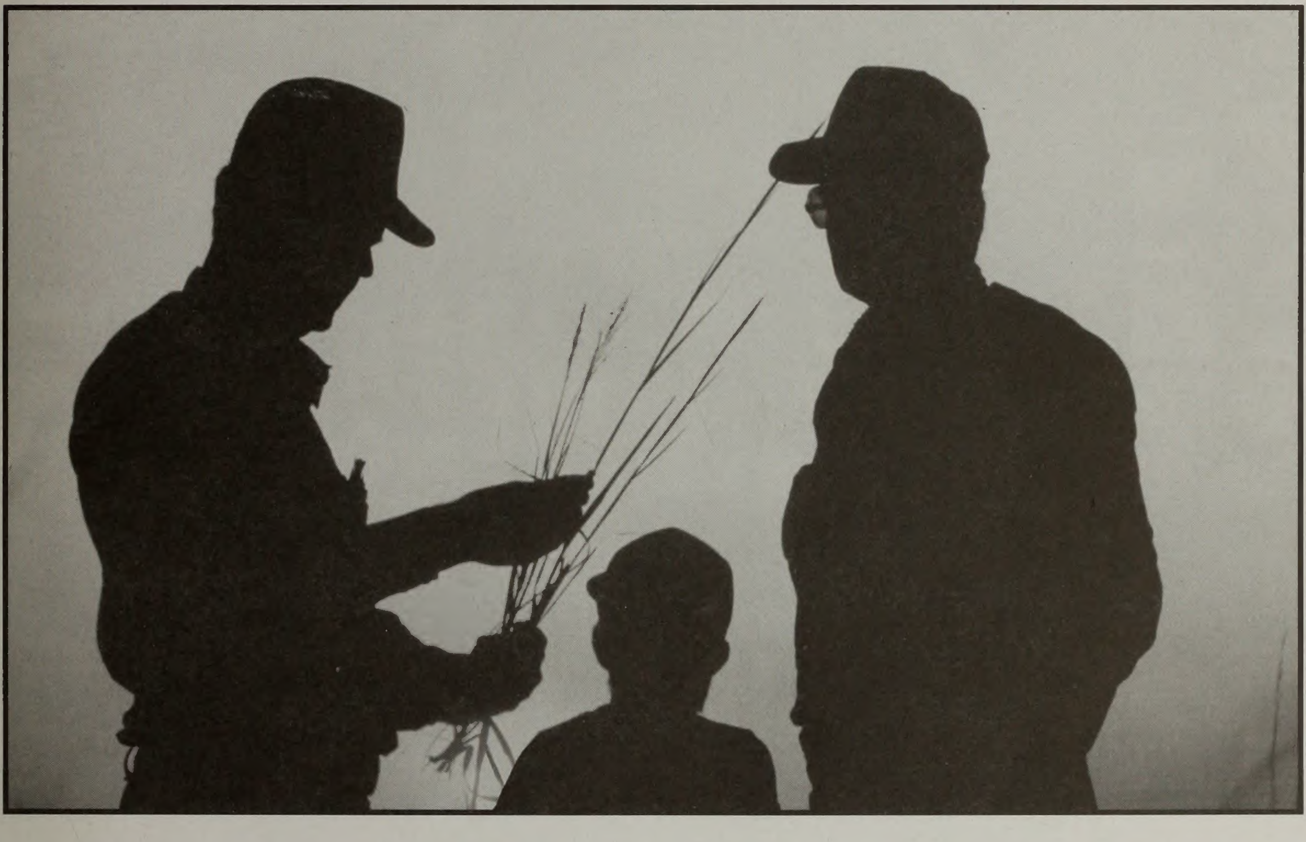
October 1996

ENVIRONMENTAL ASSESSMENT
and
RESOURCE MANAGEMENT PLAN AMENDMENT
Lonesome Lake Management Area



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The Bureau of Land Management is responsible for the stewardship of our public lands. It is committed to manage, protect, and improve these lands in a manner to serve the needs of the American people for all times. Management is based on the principles of multiple use and sustained yield of our nation's resources within a framework of environmental responsibility and scientific technology. These resources include recreation; rangelands; timber; minerals; watershed; fish and wildlife; wilderness; air; and scenic, scientific, and cultural values.

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United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Montana State Office
222 North 32nd Street
P.O. Box 36800
Billings, Montana 59107-6800

Dear Reader:

Enclosed is a copy of an amendment and environmental assessment (EA) to the West HiLine Resource Management Plan (RMP) for the Lonesome Lake management area prepared by the Bureau of Land Management's Havre Resource Area office. The amendment/EA addresses three alternatives of possible land use and future management direction for public lands in the area. Alternative 1 is the no action alternative and would continue current management of Lonesome Lake. Alternative 2 would enhance wildlife habitat and maintain or improve the shortgrass prairie and associated wildlife species, along with providing opportunities for agriculture, cultural resources interpretation and recreation. Alternative 3 would protect and enhance wildlife habitat at Lonesome Lake by placing special emphasis on managing the wetland and native prairie resources for migratory birds while eliminating grazing and farming.

Based on the written and oral comments received on the *draft EA* from the public and a Coordinated Resource Management (CRM) group, along with other federal and state agencies, Alternative 2 from the *draft EA* was modified and has been selected as the preferred alternative. Alternative 2 would benefit wildlife and livestock by applying management techniques that will meet the goals and objectives for the area.

The resource management planning process includes an opportunity for administrative review via a plan protest to the BLM's Director. Any person who participated in the planning process and has an interest which is or may be adversely affected by the approval of an amendment to an RMP may protest such approval. Careful adherence to the following guidelines will assist in preparing a protest that will assure the greatest consideration to your point of view.

Only those persons or organizations who participated in the planning process may protest. A protesting party may raise only those issues which were commented on during the planning process. New issues may be raised at any time but should be directed to the Lewistown District for consideration in plan implementation, as potential plan amendments, or as otherwise appropriate.

The protest period extends for 30 days and ends on December 9, 1996. There is no provision for any extension of time. To be considered "timely," your protest must be postmarked no later than the last day of the protest period. Also, although not a requirement, we suggest that you send your protest by certified mail, return receipt requested.

Protests must be filed in writing to:

Director (480)
Bureau of Land Management
Resource Planning Team
1849 C Street, N.W.
Washington, D.C. 20240

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DENVER, CO 80225

In order to be considered complete, your protest must contain, at a minimum, the following information:

1. The name, mailing address, telephone number and interest of the person filing the protest.

2. A statement of the issue or issues being protested.

3. A statement of the part or parts of the amendment being protested. To the extent possible, this should be done by reference to specific pages, paragraphs, sections, tables, maps, etc. included in the proposed amendment.

4. A copy of all documents addressing the issue or issues submitted during the planning process by the protesting party or an indication of the discussion date of the issue(s) for the record.

5. A concise statement explaining why the proposed decision is believed to be incorrect. This is a critical part of your protest. Take care to document all relevant facts. As much as possible, reference or cite the planning documents, environmental analysis documents, available planning records (i.e., meeting minutes or summaries, correspondence, etc.). A protest which merely expresses disagreement with the proposed decision, without any data will not provide us with the benefit of your information and insight. In this case, the Director's review will be based on the existing analysis and supporting data.

At the end of the 30-day protest period, the BLM may issue a Decision Record, approving implementation of any portions of the proposed plan amendment not under protest. Approval will be withheld on any portion of the plan under protest until the protest has been resolved.

We thank the individuals and organizations who participated in our planning process, helping us to prepare a plan amendment that will lead to more effective and efficient management of public lands and minerals in the Lonesome Lake area. Your interest is appreciated.

Sincerely,

Larry E. Hamilton

Larry E. Hamilton, Montana State Director
Bureau of Land Management

ENVIRONMENTAL ASSESSMENT
and
RESOURCE MANAGEMENT PLAN AMENDMENT

Lonesome Lake Management Area

prepared by

Bureau of Land Management
Havre Resource Area
Havre, Montana

October 1996

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CHAPTER 1
PURPOSE AND NEED

INTRODUCTION

In November of 1994, the Bureau of Land Management (BLM), US Fish & Wildlife Service (FWS) and Bureau of Reclamation (Reclamation) issued a *draft environmental assessment (EA)* which described and analyzed future management alternatives for the Lonesome Lake area. The public comment period for the *draft EA* ended in October of 1995. Based on the written and oral comments received from the public and other federal and state agencies, the BLM has prepared this *final EA* which will provide a framework for managing the many resources found on public land in the Lonesome Lake area.

Under the preferred alternative in the *final EA*, future management at Lonesome Lake would be directed toward enhancing shortgrass prairie habitat. Opportunities for interpretation of cultural and historic resources and improving outdoor recreation are also addressed.

This *final EA* also serves as an amendment to the BLM's *West HiLine Resource Management Plan (RMP)* completed in 1988. The *West HiLine RMP* provides a comprehensive plan for managing federal resources administered by the BLM in accordance with the Federal Land Policy and Management Act of 1976. Although management of the public lands at Lonesome Lake were included in the *West HiLine RMP*, the more recent issues and resource concerns were not addressed in the *RMP*.

LOCATION OF THE PLANNING AREA

The Lonesome Lake area, covering about 17,800 acres, is a complex of native shortgrass prairie, ephemeral wetlands and cropland in northcentral Montana about 70 miles south of the Canadian border and 6 miles northwest of the town of Big Sandy. Most of the area is in Chouteau County, however, about 160 acres lies in Hill County. Surface ownership consists of approximately 15,660 acres of public land, 640 acres of state land and 1,500 acres of private land. The public lands are administered by the BLM through the Havre Resource Area. Refer to the map at the end of this chapter for location of the Lonesome Lake management area and surface ownership.

ISSUES

As a result of the interest in the management of the Lonesome Lake area, a public scoping meeting and briefings were held to identify the resource issues of concern that would be used in developing future management options. In addition, public meetings were held following release of the *draft EA* to gather comments on the alternatives presented in the document.

The following resource issues were of greatest concern. These were initially identified during scoping, and in addition, from written and oral comments received on the *draft EA*.

Because of the interest and conflicts over the management direction for the area following release of the *draft EA* in October 1994, a Coordinated Resource Management (CRM) group was formed to identify management issues, help resolve resource conflicts and provide recommendations for future management.

CRM groups are often used to enable various interest groups to reach agreement or consensus on natural resource issues through a collaborative effort. The CRM group formed for Lonesome Lake consists of grazing and farming lessees, sportsman, wildlife organizations, Bureau of Land Management, Montana Department of Fish, Wildlife & Parks, US Fish & Wildlife Service and the Natural Resources Conservation Service.

Appendix B lists the goals and objectives recommended and agreed to by the members of the CRM group.

Land Use

Presently, 13,420 acres of public land in the Lonesome Lake area are leased for grazing by domestic livestock while 120 acres remain unallocated. In addition, farming (small grain) is permitted on 2,120 acres of public land.

Landowners, public land users and others interested in management of the area have expressed a concern about current land uses and resource allocation levels. The BLM has been asked to determine how compatible the current land uses are with other resource values in the area. Public comments ranged from continuing with the current levels of grazing and farming use to significantly reducing these activities or phasing them out to emphasize wildlife and recreation resources.

Further, comments were raised about the impacts to the local economy that could occur if agricultural practices were reduced or eliminated.

Wildlife Habitat/Shortgrass Prairie

Public interest towards maintaining native prairie ecosystems has increased over the past several years. Changes in land use have brought about declines in shortgrass prairie habitat along with corresponding declines in prairie dependent wildlife species.

The shortgrass prairie at Lonesome Lake provides habitat for a variety of prairie wildlife species, opportunities for recreation and forage for livestock. In addition, Lonesome Lake is part of the prairie pothole region providing habitat for waterfowl. This effort was identified in the North American Waterfowl Management Plan which recommended joint ventures among federal, state and local agencies and private organizations to cooperatively plan and implement wetland habitat projects. The Prairie Potholes Joint Venture (PPJV), covering the prairie pothole region which Lonesome Lake is a part of, is an example of one of these ventures. Goals for the PPJV are directed toward increasing waterfowl populations and improving breeding habitat.

Land Adjustment

To consolidate the land ownership pattern and improve management efficiency at Lonesome Lake, the BLM could identify public land for disposal through sale or exchange. Public lands that meet disposal criteria and do not contain significant resource values could facilitate acquisitions to consolidate land holdings.

Cultural Resources

Inventories in and around Lonesome Lake have revealed high densities of archaeological sites, tepee rings and other stone features. Reclamation and the Montana State Historic Preservation Office (SHPO) have agreed that these resources are eligible for listing on the National Register of Historic Places as an archaeological district. This archaeological district is currently confined to the western side of the planning area, pending additional study. Additional inventories may indicate the need to expand or refine the boundaries of the Historic District.

Because of this heritage resource, future management actions could be designed to protect and enhance this archaeological district and provide for some level of public interpretation.

Consultation with Native American groups for a nearby oil pipeline (Express) indicates that some of these archaeological remains may also have specific heritage value. Lonesome Lake was known to the Gros Ventre (Atsina) as Bull Grunt Lake, a seasonal camping area. The Cree and Blackfeet also consider the Lonesome Lake sites relevant to their tribal histories.

Recreation

Current levels of recreation use at Lonesome Lake are low; mainly involving wildlife viewing and to some extent hunting. Lonesome Lake is currently listed as a "Watchable Wildlife" area. Public access to this area is good. Some potential exists to improve recreational opportunities in wildlife viewing, camping, hunting and cultural interpretation.

ISSUES NOT ADDRESSED

Waterfowl Habitat Development

To examine Lonesome Lake's waterfowl production potential, Ducks Unlimited (DU) completed a study in 1993 to determine the feasibility for wetland enhancements (DU Report, 1993). These included constructing a dam on 14-Mile Coulee to provide additional breeding pair habitat and looking at efforts to concentrate water in the basin for longer periods of time. DU concluded that it was not hydrologically feasible, the cost of development would be very high, the benefits negligible and their effectiveness limited.

Water Developments

Public comments suggested the use of Ihmsen Well and an abandoned petroleum exploratory well as sources of water to augment the Lonesome Lake basin. This would involve pumping water from the existing wells to Lonesome Lake and surrounding wetlands to provide water for livestock and wildlife. Using Ihmsen Well, a privately owned well that provides domestic water, or uncapping a previously plugged exploratory well, would not be consistent with State water laws, could lead to groundwater contamination and saline seeps and lower water levels in existing wells.

For these reasons, the projects were not considered in any of the alternatives.

Areas of Critical Environmental Concern (ACEC)

During the public comment period on the *draft EA* the BLM received a nomination to consider the Lonesome Lake area for designation as an Area of Critical Environmental Concern.

To maintain the planning schedule and commitment to the public, BLM did not include an analysis of the management area to determine if the criteria is met for potential ACEC designation.

If the nomination qualifies for further consideration, per the ACEC criteria, alternatives for special management will be considered through an amendment to the West HiLine RMP.

ISSUES PREVIOUSLY ADDRESSED

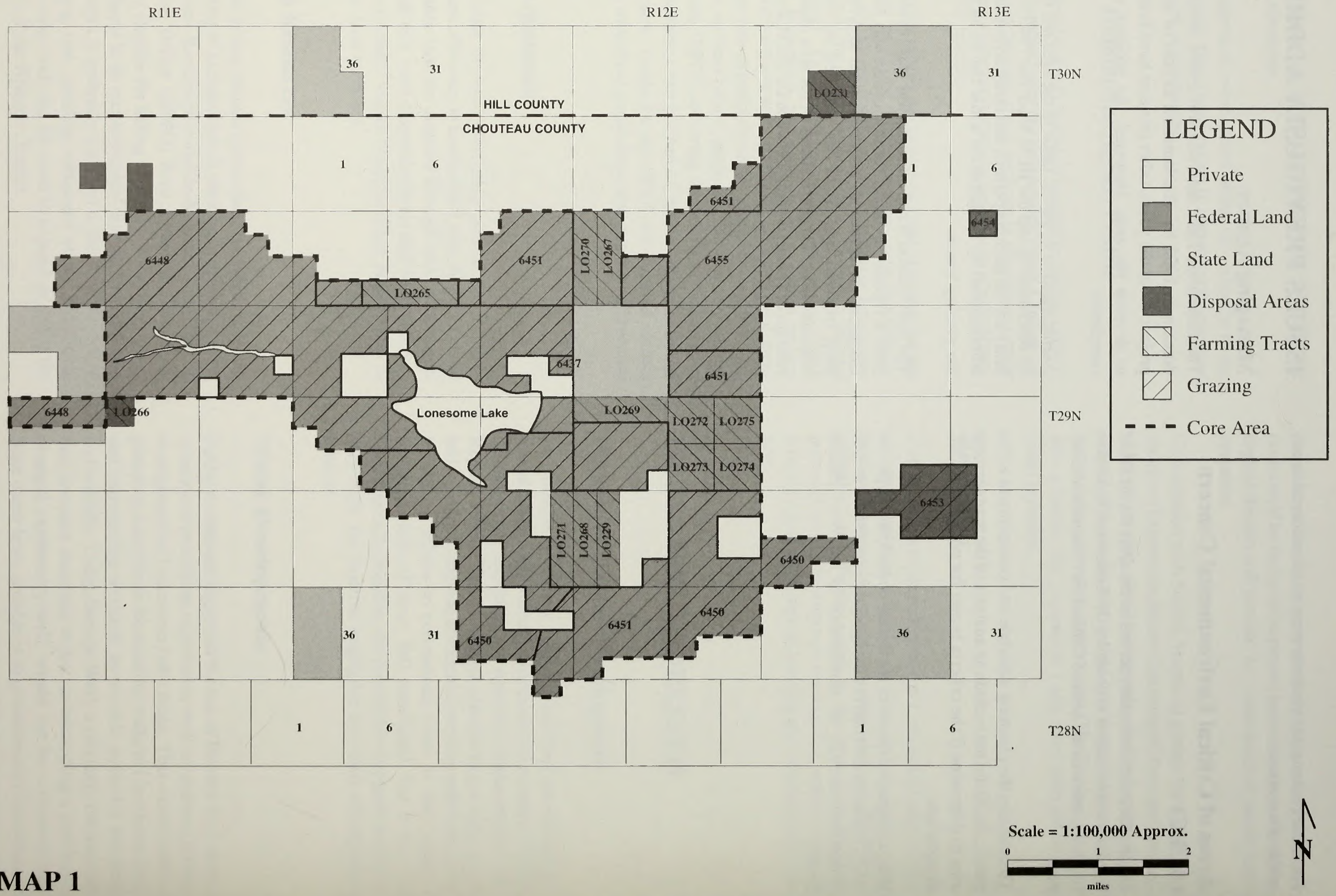
Managing Agency

The Lonesome Lake area was withdrawn from the public domain in 1902 by Reclamation as part of an irrigation project. Over the years, other projects have been proposed to develop the area. However, the projects were never completed.

Administration of public lands in the area has been shared by Reclamation and the BLM since the 1940's. Responsibility for the farming permits and other activities have been administered by Reclamation while the BLM administers the grazing leases.

The justification for the withdrawal was reviewed and in 1994 a recommendation for revocation was forwarded to Congress for approval. Although final approval has not been received, the BLM has assumed all management responsibilities for public lands in the area under a Memorandum of Understanding between the BLM and Reclamation (Appendix A).

Lonesome Lake Management Area



MAP 1

CHAPTER 2
ALTERNATIVES

INTRODUCTION

The Bureau of Land Management (BLM), with input from the public and other federal and state agencies and recommendations provided by the Coordinated Resource Management Group (Appendix B), developed three alternatives for Lonesome Lake that address the issues described in Chapter 1. The alternatives represent a range of possible land uses and future management direction for the area.

Alternative 1 is the no action alternative and would continue current management of Lonesome Lake.

Alternative 2, a modified version from the *draft EA*, has been selected as the preferred alternative. Alternative 2 would benefit wildlife and livestock by applying management techniques that would meet the goals and objectives for the area; consideration for both the needs of wildlife and agriculture, providing wildlife habitat and the values associated with a shortgrass prairie ecosystem along with providing opportunities for cultural interpretation and recreation.

Alternative 3 would protect and enhance wildlife habitat at Lonesome Lake by placing special emphasis on managing the wetland and native prairie resources for migratory birds while eliminating grazing and farming.

The alternatives are described in detail in this chapter including Alternatives Considered but Dropped from Further Analysis and Management Common to all Alternatives. Table 2.1 summarizes the alternatives.

ALTERNATIVES CONSIDERED BUT DROPPED FROM FURTHER ANALYSIS

These alternatives were considered during the study process but were not analyzed for the following reasons.

Maximizing Commodity Production

This alternative would maximize agricultural production by emphasizing grazing and farming on public lands in the Lonesome Lake area. Future management would be designed to enhance forage production for livestock while bringing more land under cultivation.

This alternative was dropped from further analysis since it is not consistent with the vegetation allocation decision in the Prairie Potholes Environmental Impact Statement (EIS) and because of potential impacts to soils, water, vegetation, wildlife and cultural resources.

Selling Public Lands

This alternative would offer for sale all the public land in the Lonesome Lake area. This alternative was eliminated from further study because of Lonesome Lake's natural and cultural resource values. The public land in the area does not meet the disposal criteria under Section 203 of the Federal Land Policy and Management Act (FLPMA) of 1976.

Wildlife Refuge

Public comments suggested the Lonesome Lake area be considered for designation as a wildlife refuge with management responsibility transferred to the US Fish and Wildlife Service. Although a concern, this issue is beyond the scope of this EA and outside the limits of BLM's authority.

Lonesome Lake Alternative

After release of the *draft EA* in late November 1994 the BLM extended the comment period to allow for more public review. During this period the BLM prepared an additional alternative for consideration based on the early comments received. This was mailed out for public review during January 1995. The alternative proposed managing the Lonesome Lake area as four units with specific management objectives and prescriptions; Lonesome Lake, Twelvemile and Lonesome Lake Coulee, Upland Game Bird Habitat and Shortgrass Prairie Habitat.

Considering that few public comments were received on this alternative, the area has limited potential for improving upland game bird habitat and many portions of this alternative have been incorporated into the preferred alternative of the *final EA*, the BLM decided to exclude analyzing this alternative in detail.

Table 2.1
Lonesome Lake Environmental Assessment

Summary of Alternatives

Issue	Alternative 1 - Current	Alternative 2 - Preferred	Alternative 3
Land Use Grazing	Vegetation allocation for livestock would remain at 4,167 AUMs. Future adjustments based on monitoring.	Vegetation allocation for livestock would remain at current level of 2,917 AUMs consistent with recommended stocking rate.	Vegetation allocated to grazing would be eliminated; phased out over 5 year period.
	Grazing leases issued for 10-year term.	Grazing leases issued for 10-year term.	Grazing leases cancelled at end of 5 years.
	Terms and conditions of lease would specify season of use, livestock #'s and amount of use.	Terms and conditions of lease would specify grazing practices to be used to meet habitat goals for area.	Grazing allowed only periodically as tool to manipulate habitat to reach wildlife goals.
Land Use Farming	Farming to continue on 2,120 acres of public land.	Farming allowed to continue on 1,760 acres of public land within core area. Long term goal to phase out and restore to native prairie with minimal economic impact to current lessees.	Farming eliminated on 2,120 acres of public land; phased out over 5 year period. Reseeded to habitat for wildlife. Various tools used to maintain health and vigor.
		Farming will continue on 360 acres of public land outside core area until tracts disposed of.	
	Leases reissued for 10-year term.	Leases reissued for 10-year term for those tracts within the core area. Farming practices modified to benefit wildlife. At time of renewal, leases would be reviewed and subject to modifications based on consistency with goals, regulations and policy. Options would range from continuing to farm to eliminating farming.	
Wildlife Habitat/Shortgrass Prairie	Habitat improvement and enhancement would continue under initiative of lessees with no special emphasis on prairie dependent species.	Habitat improvement and enhancement would focus on prairie dependent species, maintaining Lonesome Lake as a migratory stopover and for brood rearing on wet years.	Habitat improvement and enhancement would be designed to maximize production of migratory birds, other prairie dependent species and any activities which support the goals of the North American Waterfowl Management Plan.

Table 2.1 (continued)
Lonesome Lake Environmental Assessment

Summary of Alternatives

Issue	Alternative 1 - Current	Alternative 2 - Preferred	Alternative 3
Recreation	Existing recreational activities and levels of use would remain the same.	Develop and maintain dispersed recreation activities such as hunting, wildlife viewing and pleasure driving.	Dispersed recreational uses such as wildlife viewing, hiking and photography would continue. Hunting would be restricted to 40% of the area for waterfowl. Other recreational uses would be evaluated for compatibility with wildlife goals.
		Cultural resources would be used for interpretation and education.	Cultural resources would be used for interpretation and education.
		Centrally located visitor information point with short, self-guided walking path is planned.	Interpretive kiosks or signs would be used to provide visitors with information about area.
	Entire area open to all types of vehicle use at all times.	Off-road vehicle use would be limited to designated roads and trails.	Travel by vehicles would be restricted to a minimal number of designated roads and trails.
		Camping permitted but limited to 14 days.	No camping would be allowed.
Land Adjustment	No acquisition or disposal.	Table 2.4 identifies those tracts for disposal through sale or exchange.	No public land would be disposed of.
		Acquisition of private, state or other lands with willing sellers, either by sale or exchange.	Acquisition of private, state or other lands with willing sellers, either by sale or exchange.
Mineral Materials (sand, gravel)	All public lands would be available for mineral material disposal.	All public lands would be available for mineral material disposal except those within a 1 mile radius of the high water mark of Lonesome Lake.	Disposal of mineral materials prohibited.
Oil and Gas Leasing	All public lands would be open to leasing subject to standard stipulations.	All public lands would be open to leasing subject to standard stipulations and, if needed, special stipulations to protect resource values.	Leasing of public land would be prohibited except to protect from drainage.
		No surface occupancy and timing restrictions would be placed on portions of new leases to protect riparian-wetland areas, wildlife resources and cultural sites.	

MANAGEMENT COMMON TO ALL ALTERNATIVES

Cultural Resources

All alternatives will provide for the protection of cultural resources and the protection of traditional cultural values. Cultural resources will be given full consideration in all management decisions. All BLM actions which may impact cultural resources will comply with the National Historic Preservation Act of 1966, as amended and implemented by 36 CFR 800.

Noxious Plants

The BLM, under any alternative, will continue to work toward preventing the introduction and spread of noxious weeds into and within the Lonesome Lake management area. Any proposed activities on public land will incorporate weed management strategies to prevent invasion of weed species into the area and control of existing infestations.

In cooperation with the local landowners, grazing lessees and county governments, weed management strategies will be developed outlining weed awareness and education, inventory, prevention and early detection, planning and the use of integrated pest management practices.

Water Resources

BLM will continue obtaining water rights for all projects on public land and complying with Montana water laws. None of the alternatives will impact current water rights holders.

ALTERNATIVE 1 - No Action

This alternative would continue current management for public lands in the Lonesome Lake area consistent with the West HiLine Resource Management Plan (RMP).

Land Use

Grazing

Initial vegetation allocations for the Lonesome Lake area were established following completion of the Prairie Potholes EIS in 1982. This allocation set aside about 50% of the vegetation for livestock and 50% for wildlife, watershed protection, plant maintenance and other nonconsumptive uses. These target levels were made with adjustments to occur following monitoring.

Grazing in the Lonesome Lake area occurs under three kinds of authorizations. Of the seven allotments, two are under custodial use, four are authorizations with terms and conditions and one is under an allotment management plan (AMP). Grazing leases are normally issued for 10-year terms.

Custodial authorizations are issued on small, isolated tracts of public land. Grazing use is licensed for the recognized carrying capacity without any restrictions on the season of use or number of livestock. This type of authorization applies to allotments #6437 and #6454.

Authorizations with terms and conditions specify the kind and number of livestock, grazing periods and amount of use (animal unit months) allowed on the allotment. This situation applies to allotments #6450, #6451, #6453 and #6455.

Authorizations incorporating an allotment management plan allow the BLM and grazing lessee to cooperatively design a grazing program to meet the resource goals established for the area. Allotment #6448 has been under this type of management since 1989. The goals are to improve range condition and provide waterfowl nesting cover around Lonesome Lake by implementing a grazing plan coupled with various range improvement practices.

If management were to continue under this alternative, the vegetation allocation for livestock grazing would remain at 4,167 animal unit months (AUMs).

Grazing strategies would be developed that are more compatible with or enhance other resource values such as waterfowl and prairie dependent wildlife species.

Table 2.2 summarizes the current licensed use; public land acres, type of authorization, number of animal unit months allocated to livestock and season of use for each allotment. Table 2.3 summarizes the range condition for the 1979 and 1995 rangeland inventories.

Farming

Farming would continue on the 2,120 acres of public land currently under cultivation (Appendix C). Farming practices would comply with the current farm program. Leases would be reissued for 10-year terms.

Table 2.2
Lonesome Lake Grazing Allotments (1992)

Allotment	Public Land Acres	Public Land Aums	Type of Authorization	Season of Use*
6437	40	10	Custodial	W, SP, SU, FA
6448	5270	1508	Management Plan	SP, SU, FA
6450	2715	968	Terms & Conditions	W, SP, SU, FA
6451	2275	438	Terms & Conditions	SP, SU, FA
6453	440	176	Terms & Conditions	SP, SU
6454	40	10	Custodial	W, SP, SU, FA
6455	2640	1057	Terms & Conditions	SP, SU, FA
Total	**13420**	**4167**		

*Season of Use: W=Winter, SP=Spring, SU=Summer, FA=Fall

Table 2.3
Ecological Status of Public Land

		1979				1995				
Unit	**Acres**	**Exc**	**Good**	**Fair**	**Poor**	**Exc**	**Good**	**Fair**	**Poor**	**Other**
6437	40		3	37				40		
6448	5270		2598	2672			439	3294		1537
6450	2715			2715				2143		572
6451	2275			2275			40	2040		195
6453	440			440			241	184		15
6454	40		40					40		
6455	2640		731	1909				2397		243
Other	120			120			40	80		
Total	**13540**		**3372**	**10168**			**760**	**10218**		**2562**

Other - Riparian, Pothole and Lake Bed plant communities were not classified using range condition method

Wildlife Habitat/Shortgrass Prairie

Before management responsibility was transferred to the BLM, wildlife habitat management was at the initiative of the grazing and farming lessees. To date, many improvements have been constructed that have indirectly benefited wildlife such as Twelvemile Coulee reservoir, vegetation treatments and various water developments along with rotational grazing strategies.

Wildlife habitat management would continue as in the past for habitat improvements, but most actions would be done by grazing lessees at their expense.

These improvements or changes in habitat tend to occur mostly on adjoining private lands and include livestock waters, seeding tame grasses for forage production and soil stabilization and tree plantings for shelter belts and shade.

Management and improvement of wildlife habitat would receive no special emphasis.

Recreation

Current off-road vehicle (ORV) use, which is primarily associated with recreation activities, would continue. All of the 15,660 acres of public land is designated as open to all types of vehicle use at all times. There are no restrictions in place for ORV activity.

Land Adjustment

There would be no land acquisition or disposal under this alternative.

Mineral Materials

Sale contracts or permits would be issued for mineral materials (sand and gravel) while providing for reclamation. All public lands within the Lonesome Lake area would be available for mineral material disposal.

Oil and Gas Leasing

All Federal minerals in the Lonesome Lake area would be open to oil and gas leasing. Under this alternative oil and gas leases would be issued with standard stipulations (Appendix D, Form MT-3109-1).

ALTERNATIVE 2 - Preferred

Future management at Lonesome Lake would be directed toward enhancing shortgrass prairie habitat.

This alternative would benefit both wildlife and livestock while providing more recreational opportunities and interpretation of cultural resources. Some restrictions would apply to mineral development. Consolidation of land ownership through sales or exchanges with willing sellers would be pursued.

Land Use

The BLM would encourage and support any efforts where private landowners, the farming and grazing lessees and special interest groups develop and implement programs on public or private land that benefit or create wildlife habitat, provide more recreational opportunities and interpretation of cultural resources.

Grazing

Grazing would be one of the tools used to meet the goal of maintaining and improving the health and productivity of a shortgrass prairie ecosystem.

The amount of forage available for livestock would remain at the current level of 2,917 AUMs consistent with the recommended stocking rate provided by the Lonesome Lake range survey report completed in 1995. This represents a 30% decrease from the original 1982 forage allocation of 4,167 AUMs. These AUMs may be reduced or increased depending on future monitoring results.

New term grazing leases would be offered for a period of 10 years. The leases would specify the kind and number of livestock authorized to graze the allotment, the period of use and the amount of use (AUMs).

Those allotments in the core area, except for custodial leases, would contain additional terms and conditions in the lease necessary to meet the resource goals and objectives developed for the allotment.

One condition of the lease would require each grazing lessee within the core area to meet with the BLM each year before turning out livestock to prepare an annual operating plan.

Annual operating plans would specify how grazing use would occur in each allotment to meet plant needs, especially during the active growing period, to provide cover and habitat needs of wildlife, to meet nutritional requirements of wildlife and livestock and avoid conflicts with wildlife and other resources.

Each year grazing strategies would be applied ranging from rapid rotation (shorter grazing periods) to more conventional grazing systems such as deferred and rest rotation.

The annual operating plans would also describe the structural improvements needed to implement the various grazing practices. Various rangeland improvement facilities and developments would be scheduled to meet the resource goals for each management unit. Vegetation treatments (chiseling and fire) would be designed to meet wildlife habitat requirements and improve rangeland productivity. Existing tame pastures would be intensively managed to maximize forage production for livestock and defer early use of native pastures. Permanent and temporary fences would be installed to protect important resource values, shorten grazing periods and increase the stock density to provide varying levels of animal impact. Adding on to existing stock water pipelines would improve management flexibility and eliminate or reduce the need to use reservoirs as the primary source for livestock water. Some existing structures would require modification to enhance their use by wildlife or increase the value of fences, waterholes and other range improvements.

Grazing use would be planned, evaluated and replanned to determine whether management is moving away from or toward the desired goal based on rangeland assessments and monitoring. Biological monitoring would be conducted to provide critical information needed to make future management decisions and serves as an early warning of problems that may be starting.

Monitoring efforts would focus on recording and evaluating changes in succession (managing for the plant community that best meets the objective for the site), soil health (cover, erosion, plant types) and residual cover.

Farming

Within Lonesome Lake Core Area

Farming would be allowed to continue on the 1,760 acres of public land currently under lease (Appendix C). However, the BLM's long term goal is to phase out farming and restore the tracts to native prairie with minimal economic impact to current lessees.

Existing leases would be renewed for 10 years. Farming practices would be modified during this period on key farm tracts (those closest to Lonesome Lake) to benefit nesting waterfowl, improve plant diversity and provide cover. Practices such as delayed tillage, no fall tillage, chemical fallow, odd area planting and leaving a standing stubble height of 8" to 10" during harvest would be incorporated into leases.

When leases expire (around 2006) they would be reviewed and subject to modification based on consistency with the management goals and current BLM regulations and policy. Options would range from continuing to farm for another 10 year term to discontinuing farming of public lands.

Outside Lonesome Lake Core Area

Farming would be permitted to continue on 360 acres of public land currently under cultivation (Appendix C). However, these tracts have been identified for disposal through sale or exchange. Permits would be issued for 3-year terms subject to cancellation when the land is transferred to private or state ownership.

Wildlife Habitat/Shortgrass Prairie

Management would focus on providing the habitat needed for shortgrass prairie dependent wildlife species.

Maintaining a healthy, diverse prairie ecosystem would benefit shortgrass prairie dependent species such as Baird's sparrow and other neotropical birds, mammals such as swift fox, species of concern such as burrowing owl and mountain plover. Providing healthy shortgrass prairie habitats of varying successional levels would meet the varying needs of these diverse wildlife species within the Lonesome Lake area. Various tools; such as rest, grazing, animal impact, fire and mechanical treatments would be employed to provide for a mosaic of use patterns and desired plant communities to meet the seasonal requirements of wildlife.

Emphasis would also be placed on maintaining the habitat in and around Lonesome Lake as a spring stopover for migrating waterfowl and as a brood rearing area during those years when the basin provides water later on in the summer.

Shallow water retention structures would be constructed to serve as pair ponds for waterfowl and shorebirds.

Any over water obstacles would be removed or modified to eliminate hazards to wildlife movement, primarily waterfowl.

The presence of residual cover from the previous year is extremely important for nesting waterfowl and other prairie nesting species. Residual cover would be measured at the end of the growing season to document the amount of carryover vegetation available the following year for nesting.

Land Adjustment

The BLM has identified tracts of public land lying outside of the Lonesome Lake core area for disposal; either by sale or exchange. These tracts are widely scattered parcels which are difficult to manage with anything beyond custodial administration and have no significant public values. The tracts listed in Table 2.4 meet sale criteria (1) under sec. 203 (a) of FLPMA.

Table 2.4
Disposal Tracts

Location		Acres
T29N, R9E,	Sec. 9, E1/2SE1/4	80
T29N, R11E,	Sec. 3, E1/2SW1/4	80
	Sec. 4, NE1/4SE1/4	40
	Sec.22, NW1/4NW1/4	40
T29N, R13E,	Sec. 7, NE1/4NW1/4	40
	Sec. 19, SW1/4SW1/4	40
	Sec. 30, W1/2NW1/4	80
T29N, R12E,	Sec. 24, S1/2SE1/4	80
	Sec. 25, N1/2NW1/4	80
	Sec. 25, NE1/4	160
T30N, R12E,	Sec. 35, SE1/4	160
T32N, R14E,	Sec. 26, Lots 4, 5	80
	Total	**960**

Inside the Lonesome Lake core area, the BLM would seek to acquire private, state or other lands with willing sellers, either through sale or exchange, in accordance with the acquisition and disposal criteria in the West Hiline RMP (West HiLine Resource Management Plan, 1988).

Recreation

Recreation emphasis would be to develop and maintain opportunities for dispersed recreational activities such as hunting, wildlife viewing and pleasure driving. Cultural resources throughout the area would provide opportunities for interpretation and public education subject to recommendations from traditional user groups.

A centrally located visitor information point would be used to educate the public on the variety of resources found in the area.

The entire 15,660 acres of public land would be designated as a limited area for off-road vehicle use. Travel by all vehicles would be restricted to designated roads and trails yearlong (refer to the map at the end of this Chapter). Off-road travel for administration of a federal lease or permit would be granted, unless specifically prohibited. Camping would be permitted but limited to 14 days.

The following exceptions would apply to the limited designation:

1. Off-road vehicle use would be allowed for game retrieval.

2. Vehicle access for camping would be permissible within 100 yards of designated roads and trails.

3. Exceptions could be granted on a case-by-case basis through the issuance of a special use permit.

Resource damage, changes in landscape and user conflicts would be considered in opening or closing roads and trails in the future. As additional mapping and signing occurs, the roads and trails designated as open or restricted may change depending on future management needs.

Mineral Materials

Public lands within the Lonesome Lake area would be available for mineral material disposal through sale or permit with the exception of those within a one mile radius of the high water mark of Lonesome Lake.

Material sales or permits in amounts less than 50,000 cubic yards and disturbing less than five acres may be processed with a Categorical Exclusion Review. Sales or permits exceeding these levels require an environmental assessment. A reclamation plan and operating stipulations to protect nonmineral resource values would be included in the permit. The reclamation bond is held by the Montana Department of Environmental Quality. Government agencies are not bonded for reclamation, but a reclamation plan is incorporated into the permit. Material sales and permits are monitored for production verification and compliance with operating and reclamation requirements.

Normally, material sale contracts are valued according to a general appraisal schedule. Sales of greater than 10,000 cubic yards or valued at more than $5,000 require an individual appraisal.

Free Use Permits (FUP) would be issued to government agencies or subdivisions and to nonprofit organizations. Materials obtained by FUP may not be bartered or sold.

Common use areas or community pits would be designated if the level of localized activity warrants.

Oil and Gas Leasing

This alternative would provide for oil and gas exploration and development on public lands while protecting other resource values through standard lease terms, standard stipulations or special stipulations where resource values are not compatible with exploration and development. The special stipulations are described in Appendix D.

A no surface occupancy stipulation would be placed on portions of new leases to protect riparian-wetland areas, ferruginous hawk nest sites, and critical cultural sites. Timing or controlled surface use restrictions would be used to protect raptor nest sites, sage and sharptail grouse nesting areas and swift fox dens (Appendix D).

ALTERNATIVE 3

This alternative would protect and enhance wildlife habitat at Lonesome Lake while placing special emphasis on managing the wetland and native shortgrass prairie resources for migratory birds. Maximizing the production of migratory birds and other prairie dependent wildlife species would be the primary goal for the area. Activity plans would be developed to support this goal and all secondary uses would have to be compatible with and contribute to the wildlife objectives for the area.

Land Use

Grazing

Current grazing authorizations would be phased out over a five year period to minimize the economic impact to local permittees. All forage would be allocated to wildlife, watershed protection, plant maintenance and other nonconsumptive uses.

All public lands would be rested until the need for using grazing as a habitat management tool is indicated.

Future livestock grazing would be used only as a tool to meet wildlife and vegetation management objectives. If grazing is needed to maintain or enhance vegetation condition, a rest-rotation system or other similar method would be used to increase residual vegetative cover for upland nesting birds.

Farming

Current farming activities on 2,120 acres would be phased out over a five year period. These tracts would be reseeded to a mixture of grasses, forbs and shrubs to provide additional wildlife habitat and reduce soil erosion. Maintaining the health and vigor of these reseeded areas may include periodic haying, grazing or burning treatments.

Wildlife Habitat/Shortgrass Prairie

Habitat management would focus on activities to maximize the production of migratory birds and other prairie dependent wildlife species. Emphasis would be placed on maximizing residual cover for ground nesting birds which prefer more cover than shortgrass plant communities provide.

Wetland enhancement or development activities may include the construction of small reservoirs to provide additional breeding pair habitat for waterfowl. Riparian and emergent vegetation would be restored and enhanced by excluding livestock grazing from wetland areas.

Habitat management would also focus on activities which support the goals of the North American Waterfowl Management Plan. Earthen dikes may be built to enhance or create additional wetland habitat in cost effective locations that provide significant benefits to waterfowl and other migratory birds.

Land Adjustment

Opportunities to purchase, exchange or acquire easements of these lands would be explored to consolidate federal or private ownership. Any acquisition of private lands would proceed on a willing seller basis. No public land would be disposed of under this alternative.

Recreation

All public access and recreational uses would be evaluated to ensure compatibility with the wildlife objectives for the area. Compatible recreational uses would include activities such as wildlife viewing, hiking and photography. Hunting for resident game species would continue, however, typically no more than 40% of the area would be open for waterfowl hunting.

The entire 15,660 acres of public land would be designated as a limited area for off-road vehicle use. Travel by all vehicles would be restricted to a minimal number of designated roads and trails. No cross-country travel would be permitted. Overnight camping would be prohibited.

Environmental education and interpretation would be limited to signs, exhibits or other watchable wildlife facilities. Opportunities to explain the importance of this prairie wetland ecosystem for migratory birds and other wildlife might include interpretive kiosks and exhibits to provide information to the public on the resources of the area.

Also, exhibits may be developed to interpret the cultural resource throughout the area. Interpretative signs or kiosks may also be developed at significant cultural sites to provide visitors and local school groups with additional information on the history of the area.

Development of new facilities in the area would be minimal under this alternative. No new roads or buildings are planned.

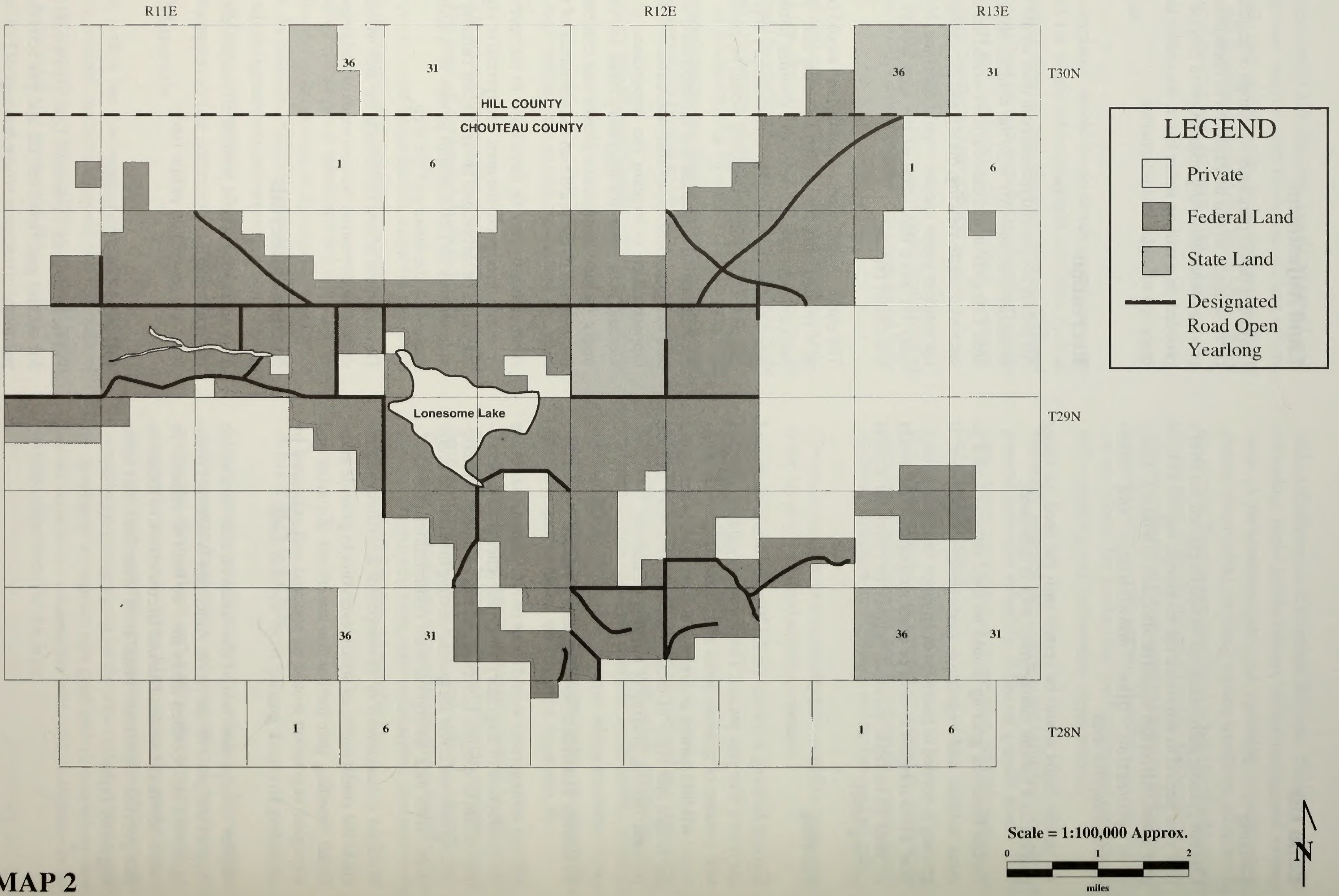
Mineral Materials

This alternative would prohibit all surface disturbance for mineral material exploration and development (including sand and gravel) on public lands.

Oil and Gas Leasing

Public lands in the Lonesome Lake area would not be leased for oil and gas. However, oil and gas activities would be permitted in instances where drainage of Federal oil and gas was occurring from public lands.

Lonesome Lake Transportation Plan



MAP 2

CHAPTER 3
AFFECTED ENVIRONMENT

INTRODUCTION

This chapter describes relevant natural resources and economic and social conditions found in the study area. The following critical elements of the human environment are not affected and will not be addressed further in this document; air quality, prime and unique farm lands, floodplain, hazardous wastes, wild and scenic rivers, wilderness, and environmental justice.

MINERAL RESOURCES

The Lonesome Lake area has both high occurrence and development potential for sand and gravel. The entire area is covered by glacial drift left by retreating continental glaciers at the end of the Pleistocene (10,000 years ago). Lonesome Lake is a glacial feature called a kettle which is defined as a depression left in glacial drift when a detached mass of glacial ice melted away. The sand and gravel deposits surrounding the Lake range in thickness from 10 to 50 feet. Some areas may have deposits up to 100 feet thick.

The glacial deposits that have been reworked by post depositional stream flow have the most potential for development. These types of deposits are much more sorted and have consistent grain size. Whereas unworked glacial drift deposits are poorly sorted and may have a wide range of oversize and undersize material which is usually considered waste in sand and gravel operations. Generally, portions of the area that are adjacent to existing drainage are better sources for sand and gravel than the lands between the drainage.

OIL & GAS

There have been some 40 plus oil and gas wells drilled within and adjacent to the Lonesome Lake area. Of these wells, four have tested commercial quantities of natural gas, but are currently shut-in. Three wells have been drilled within the Lonesome Lake area. Nearly all of the production is from the Eagle sandstone with small amounts from the Judith River formation. The potential for the occurrence of hydrocarbons, particularly natural gas, is considered high for the area (Appendix D).

SOILS

The topography of the Lonesome Lake area is generally flat, with elevations varying between 2,700 to 2,800 feet. Topographic relief is mostly limited to intermittent drainage or coulees, generally draining to the lake basin.

Soils belong to the Evanston, Fort Benton, Phillips, and Telstad-Joplin families of loam to fine sandy loam (USDA, 1993). Soil fertility and erodability vary widely, depending primarily on the percentage of sand in the loams. Slopes vary from 0 to 8%. All soils in the Lonesome Lake area are classified as highly erodible lands.

Detailed soil surveys are available through the Natural Resource Conservation Service (NRCS), formerly the Soil Conservation Service, for Chouteau and Hill counties. Although unpublished, field offices have the capability to provide specific information, such as physical and chemical characteristics and productivity, for the various soil types found in the Lonesome Lake area.

VEGETATION

Native vegetation in the Lonesome Lake area is typical of the plants and communities found in the northern Great Plains. Native plant communities consist primarily of upland grasslands and riparian-wetlands. These types have evolved under grazing use by large herbivores and are influenced by climate and topography of the area.

Lonesome Lake lies within an arid region, only receiving 10 to 12 inches of precipitation annually. Most of this falls during the months of April, May, June and July. Low precipitation coupled with high temperatures during the summer, long hours of sunshine and hot winds favor plant species that are well adapted to drier conditions and short growing seasons. For these reasons, the area is dominated by low growing perennial grasses, forbs and dwarf shrubs.

On uplands, vegetation is dominated by blue grama, needleandthread, prairie junegrass, native bluegrass and western wheatgrass. The forb and shrub component of these plant communities is usually very small making up only 5 to 7% of the total. Silver sagebrush is the most common shrub. Dense clubmoss, a low growing, mat-forming plant, is also a conspicuous component of nearly all upland areas. Because of its growth form and abundance, productivity of these areas are lowered. Most often some kind of disturbance is needed to improve production and species diversity.

These relatively flat upland areas are occasionally dissected by smaller swales and draws. Receiving additional moisture, taller grass species such as green needlegrass and woody species such as silver sagebrush, western snowberry and Wood's rose can be found.

Riparian communities, mostly located along the tailwaters of Twelvemile and Lonesome Coulee reservoirs, are dominated by sedges and rushes representing the potential plant community for these sites. Use by livestock is often greater during dry years or late in the growing season due to drier upland forage conditions.

Lonesome Lake, an ephemeral wetland dependent on surface runoff, is dominated by common spikesedge, foxtail barley and western wheatgrass. These vegetation types provide a mosaic throughout the lake bed with pure stands of spikesedge and foxtail barley and mixed stands of spikesedge and water smartweed. Distribution and colonization of areas by foxtail barley usually occurs on sites that are periodically flooded, quickly dry out and contain saline or alkaline water. Infrequent flooding, which occurs at Lonesome Lake, will lead to the development of this vegetation type. Foxtail barley has little value for wildlife and livestock.

About 2,120 acres of public land is permitted for small grain crop production. Winter wheat, spring wheat and barley are rotated in a crop-fallow sequence. Mechanical tillage and chemicals are used to control weeds and conserve soil moisture during fallow years. After harvest, the stubble stands through the winter to catch and hold snow. The NRCS provides planning recommendations needed in determining cropping sequences, recropping, residue requirements and other conservation practices.

About 430 acres of public land have been seeded to tame pasture, primarily crested wheatgrass. These pastures provide early spring forage deferring use by livestock on native pastures.

There are no significant noxious weed infestations in the area, however, Canada thistle is found to a limited extent and spotted knapweed and baby's breath have been located along county roads. Effective weed control on surrounding agricultural lands, relative lack of new ground disturbing activities, lack of weed seeds being carried in by equipment and vehicles from infested areas and lack of seeds being carried in by rivers and streams has contributed to a relatively weed-free area.

Initially, range condition of the public lands was inventoried in 1979 during development of the *Prairie Potholes Environmental Impact Statement*. In 1995, Reclamation contracted another range survey on public lands. Range site types and conditions were determined and recorded, riparian and lake bed communities were identified, livestock carrying capacities were calculated, range improvements were mapped, fences were evaluated with respect to wildlife hazards and eleven permanent vegetation transects were established. Table 2.3, Chapter 2, summarizes the ecological status on public land.

There are no known threatened or endangered plant species present in the area. The Montana Natural Heritage Program has identified 383 plant species of concern in Montana, eight of which might occur in the Lonesome Lake area.

WATERSHED

Lonesome Lake is a very shallow, ephemeral basin intermittently flooded during spring runoff and less frequently during intense summer storms. Fourteenmile, Twelvemile and Sixmile coulees are the principle watersheds contributing to Lonesome Lake. Water from these drainages enter Lonesome Lake on the west side. The vast majority of this flows through Twelvemile coulee. Much of the information that follows comes from a report prepared by Ducks Unlimited in 1993 that examined the possibility of increasing the basin's waterfowl production potential (DU Report, 1993).

The total watershed contributing to Lonesome Lake is 288 square miles; 26 miles of which are considered noncontributing except during large runoff events. Twelvemile coulee contributes 248 square miles to this.

An existing reservoir is located along the arm of Twelvemile Coulee just before emptying into Lonesome Lake. The reservoir floods about 160 acres and provides a seasonal wetland for waterfowl nesting and brood rearing.

Historical records of long-time residents suggests Twelvemile Coulee and Lonesome Lake fill three years in ten. Lonesome Lake has only been high enough to flow out of Lonesome Lake Coulee just once in recent memory.

Water losses from the Lonesome Lake basin are very high. Evaporation from shallow lakes and reservoirs is estimated to be near 40 inches in northcentral Montana. Gravel seams also contribute to infiltration losses.

Table 3.1 shows the current permitted water right holders.

Table 3.1
Existing Water Rights at Lonesome Lake

Point of Diversion	Use	Amt	Source	Owner
T29N R11E Sec. 10 SW1/4SW1/4SE1/4	ST	.62	14-Mile Coulee	Public
T29N R11E Sec. 10 SW1/4SW1/4SE1/4	WI	.38	14-Mile Coulee	Public
T29N R12E Sec. 11 NW1/4NE1/4NW1/4	WI	7.42	Well	Public
T29N R12E Sec. 11 NW1/4NE1/4NW1/4	ST		Well	Public
T29N R12E Sec. 15 SW1/4SW1/4NW1/4	WI	2.38	Pit	Public
T29N R12E Sec. 15 SW1/4SW1/4NW1/4	ST	.62	Pit	Public
T29N R12E Sec. 17 SW1/4SE1/4NE1/4	WI	9.38	Pit	Public
T29N R12E Sec. 17 SW1/4SE1/4NE1/4	ST	.62	Pit	Public
T29N R12E Sec. 18 SW1/4NW1/4SW1/4	ST	.62	Pothole	Public
T29N R12E Sec. 18 SW1/4NW1/4SW1/4	WI	1.38	Pothole	Public
T29N R12E Sec. 19 SW1/4NW1/4NW1/4	ST	.62	Well	Public
T29N R12E Sec. 19 SW1/4NW1/4NW1/4	WI	4.22	Well	Public
T29N R12E Sec. 20 SE1/4SE1/4NW1/4	ST	.62	Pit	Public
T29N R12E Sec. 20 SE1/4SE1/4NW1/4	WI	.88	Pit	Public
T29N R12E Sec. 30 NE1/4NE1/4NE1/4	ST	.62	Pit	Public
T29N R12E Sec. 30 NE1/4NE1/4NE1/4	WI	1.38	Pit	Public
T29N R12E Sec. 32 NE1/4SW1/4	ST		Well	Public
T29N R12E Sec. 32 NE1/4SW1/4	WI	2.61	Well	Public
T29N R12E Sec. 33 SW1/4SE1/4NE1/4	ST	10	Reservoir	Public
T29N R12E Sec. 32 NE1/4SW1/4	ST		Well	Public
T29N R12E Sec. 32 NE1/4SW1/4	WI	2.61	Well	Public

Use: ST=Stock, WI=Wildlife
Amt (Amount): Acre Feet/Year

WILDLIFE

Wildlife in the area is typical of that on shortgrass prairies of northcentral Montana with proximity to ephemeral wetlands. The area has moderate habitat value for big game, game birds and many nongame species. Pronghorn antelope are the most prominent big game species with up to 50 animals using the area. There is inadequate winter range at Lonesome Lake to sustain a stable antelope population. Both mule and whitetail deer may use the area seasonally, but it contains no crucial habitat for these species and numbers are average for shortgrass prairie ecosystems in south Hill and north Chouteau counties.

Game birds in the area include sage grouse, sharptail grouse, hungarian partridge, pheasant and mourning dove. Their numbers fluctuate annually depending on environmental conditions.

This area contains many indigenous species common to the habitat type with a variety of nongame birds (shorebirds, raptors, passerine), mammal, amphibian and reptile species.

During wet years, the upland prairie next to open water provides nesting cover for several species of dabbling ducks. Man-made reservoirs, and during wet years Lonesome Lake, provide very productive brood rearing habitat. Lonesome Lake's greatest value to waterfowl is as a spring migration stopover.

Nesting cover for all upland nesting birds is limited by extensive areas of clubmoss and blue grama. This successional level has reached equilibrium with existing climate and soil conditions and represents a threshold without some physical or biological disturbance to induce change.

Neotropical birds breed or migrate through Montana and spend their winter elsewhere, usually in Mexico or South America. Recent evidence suggests that populations of many of these species are declining. There are 143 species of neotropical migratory birds in Montana. Ninety of these species breed or migrate through the Lonesome Lake area (Skaar, 1992).

Currently, there are several species of concern that presently inhabit or could possibly be found in the Lonesome

Lake area. Listed species that occur or could occur in the area include the bald eagle, piping plover and black-footed ferret. Other species of concern which use or may use the area include Preble's shrew, ferruginous hawk, Baird's sparrow, burrowing owl, black tern, loggerhead shrike and long-billed curlew.

Bald eagles migrate through the area in spring and fall but have no nesting or winter roosting habitat.

Piping plover and black-footed ferrets have not been seen in the area and habitat is not considered ideal for either.

Mountain plover and swift fox are proposed for listing as threatened. Neither species has been identified in the Lonesome Lake area but habitat exists for both.

Ferruginous hawk, Baird's sparrow, burrowing owl, black tern and long-billed curlew are all present in the area.

Many species of wildlife utilizing the Lonesome Lake area have adapted to and are dependent on very low cover of shortgrass habitat as security from predators. Many of these species evolved in association with overgrazing by bison, prairie dogs and ground squirrels. Other species adapted to the different successional stages following wildfire or overgrazing. Many of the species adapted to lack of predator cover have taken advantage of the sparse cover offered by blue grama and club moss within the Lonesome Lake area.

RECREATION

While information on recreational use in the area is limited, hunting seems to be the most common, although off-road vehicle use, sightseeing and wildlife watching are becoming more popular.

The Montana Department of Fish, Wildlife & Parks (MDFWP) estimated, using Hunting District 610 antelope harvest and aerial photos, the number of antelope hunters in the Lonesome Lake area per square mile of grassland habitat. Upland game birds and waterfowl hunter use was estimated from harvest data in Chouteau and Hill counties.

Presently there are 1.5 antelope hunters per square mile of grassland habitat in the area, each averaging about 3 hunter-days of hunting and 1 upland game bird hunter per square mile of grassland habitat, averaging about 4 hunter-days (MDFWP, 1993). About 10 waterfowl hunters use the area at present, each averaging 6 hunter-days per season.

LANDS

BLM rights-of-way (R/W) are issued for various utility and transportation purposes, communication sites, oil and gas facilities and pipelines and water related facilities such as reservoirs, dams, ditches, canals, dikes, wells and water pipelines. There are currently five BLM R/Ws issued on public lands within the Lonesome Lake area.

Express Pipeline, Inc. submitted a R/W application to construct a 24" pipeline which would transport crude oil from Wild Horse, Canada to Casper, Wyoming; the pipeline would bisect the Lonesome Lake area. An environmental impact statement (EIS) analyzing the potential impacts created by the pipeline has been completed. A record of decision (ROD) authorizing the pipeline on BLM land in Montana and Wyoming was signed by the BLM Wyoming State Director on April 15, 1996. The selected alternative provides for construction of the pipeline with specific conditions of approval and mitigation measures. The Express Pipeline would be placed immediately adjacent to the Altamont pipeline route (within 150'). Mitigation measures to be implemented during the various stages of pipeline construction are outlined in the Express Pipeline Plan of Development (POD).

Altamont is a Canadian joint venture which has proposed construction of a 30" pipeline designed to transport natural gas from Alberta, Canada to Opal, Wyoming. The Federal Energy Regulatory Commission (FERC) prepared an EIS following Altamont's application for a Certificate of Public Convenience and Necessity (Certificate) in 1989. A certified pipeline route was designated during the EIS process and a Certificate was issued in 1991. Construction of the Altamont pipeline has been delayed, however, due to uncertainty of natural gas markets in the United States. The original routing for the Altamont pipeline followed the half section line through T. 29 N., R. 11 E., Sec. 12, 13, and 24, west of Lonesome Lake. A minor route adjustment was required to avoid a concentration of historic sites. In conjunction with the Altamont route, Express shifted their route approximately 3,000 feet west to avoid the sites.

CULTURAL RESOURCES

Reclamation contracted a 4,320 acres archaeological inventory adjacent to Lonesome Lake in 1992.

Within the 4,320 acres inventoried, over 1,100 stone circles were identified along with other prehistoric sites and stone features. A total of 93 prehistoric sites were defined during this inventory giving the inventoried parcel a much higher site density than would otherwise be expected, absent this unique geological feature. Reclamation and the Montana State Historic Preservation Office have agreed that the Lonesome Lake sites constitute an archaeological district eligible for the National Register of Historic Places.

An archaeological inventory was also undertaken for the Express pipeline. This pipeline was re-routed further west to avoid the high densities of archaeological sites close to the lake. The Express pipeline study revealed that Lonesome Lake was a regular stop over point for various Native American groups during the historic period. Further, the lake has specific heritage value to the Gros Ventre (Atsina) as a habitual camping area previously known as Bull Grunt Lake.

However, the 4,320 acre inventory was confined to the western side of the Lonesome Lake study area as was the Express pipeline inventory. The eastern side of the study area, away from the lake, has not received this level of examination for archaeological resources. However, the small inventories conducted in this area as well as the large studies described earlier suggest that archaeological site density declines away from the lake feature.

ECONOMIC AND SOCIAL CONDITIONS

Public lands surrounding Lonesome Lake are both grazed and farmed. There is also some hunting. The BLM administers grazing on 13,420 acres, divided into 7 allotments (see Table 2.2, Chapter 2). These allotments are leased by six ranchers for cow/calf operations. Two thousand one hundred and twenty acres are leased to nine farmers in the area, primarily for spring or winter wheat (Appendix C).

The economic activity of grazing leases was estimated based on the permitted use of 2,917 AUMs. Assuming that each cow/calf unit would use public lands for 6 months of seasonal grazing, 486 cow/calf units would amount to $209,000 in gross livestock receipts annually. This would translate into $450,000 in local economic activity annually (purchases of production items, financial services and sales).

Farming benefits were estimated using winter wheat in a crop/fallow rotation. No recropping was considered and a strict 50% rotation was followed. Wheat prices and yields (averaged for Chouteau County) were taken from *Montana Agricultural Statistics: 1992*. Gross crop value was computed from the prices multiplied by yield for 50% of the acres (reflecting a 50% fallow system). Gross receipts were estimated to be $118,000 annually, translating into $217,000 in annual economic activity to the local area.

Total annual gross returns in the area were estimated to be $327,000 with associated economic activity of $667,000. Each acre of rangeland thus generated $33.53 in economic activity, each acre of cropland $102.35.

Using the unit day value method to estimate recreational benefits, hunting returns $14.44/hunter-day and general recreation returns $10.70/user-day in economic activity to the area. Recreation returns about $3,451 of economic activity to the area annually.

During meetings with lessees and other members of the public, concerns were voiced that changes in land use at Lonesome Lake would affect the local way of life. Some residents interpret proposals for changes in land use as the government trying to change a way of life they would like to pass down to their children. They feel local lessees are responsible stewards of public lands and that they ranch and farm in an environmentally responsible way.

CHAPTER 4
ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

This chapter describes the environmental and social and economic consequences of implementing the alternatives presented in Chapter 2.

IMPACTS BY ALTERNATIVE

This section describes the environmental consequences from implementing the three alternatives. The impacts are discussed for each environmental element by issue and alternative.

IMPACTS TO MINERAL RESOURCES

From Grazing, Farming, Wildlife Habitat/ Shortgrass Prairie, Recreation & Land Adjustment

Alternative 1 (Current), Alternative 2 (Preferred) & Alternative 3: None of these activities would affect the availability or condition of the mineral materials resource under any of the alternatives.

From Oil & Gas Leasing

Alternative 1 (Current): Alternative 1 would provide the largest public land base for oil and gas leasing. It is possible that minor future demand could exist for gravel to be used in well road or pad construction.

Alternative 2 (Preferred): Most of the public land would be available for oil and gas leasing and mineral material disposal.

Alternative 3: Neither commodity would be produced from the public lands and neither resource base would be affected.

IMPACTS TO SOILS & VEGETATION

From Grazing

Alternative 1 (Current): Vegetation allocations and stocking would continue at current levels. No immediate change in current authorizations would be made. However, future grazing adjustments would occur based on rangeland monitoring. Monitoring efforts would focus on rangeland health and sustainability and meeting plant needs.

Impacts likely to occur would result from the timing and duration of livestock use. Grazing systems or strategies employing low density - long duration stocking levels and periods of use would impact riparian, wetland and upland areas. Riparian and wetland areas (emergent vegetation around reservoirs, potholes and Lonesome Lake) would be affected if livestock use occurred during critical growth periods. This is generally during the start of plant growth and the hottest part of the summer when livestock are likely to congregate around watering areas and areas with green vegetative growth remaining after upland vegetation dries out and cures. Also, trampling damage to shoreline vegetation and banks would occur under long periods of use.

In upland areas, extended periods of grazing use during the growing period would result in overuse of desirable forage plants. This tends to favor the less desirable plants within a community by stressing the grazed plants placing them at a competitive disadvantage. If serious enough, changes or shifts in the kind and amount of plants would occur. This would impact plant species diversity, vigor and ability of plants to reproduce.

Soil loss from current grazing practices is minimal. Riparian and wetland areas are well vegetated with adequate vegetative cover. Soil movement on upland sites is insignificant. Existing plant communities provide excellent ground cover with minimal areas of bare soil exposed.

Alternative 2 (Preferred): Grazing management would emphasize strategies designed to meet the goals of maintaining and improving the health and productivity of a shortgrass prairie ecosystem and reducing wildlife/livestock conflicts.

Management would move toward shorter grazing periods, longer recovery periods, rest, planning grazing periods around critical wildlife seasons and using animals to impact or disturb upland areas.

Planning for shorter grazing periods, rest and allowing adequate time between grazing for plants to recover would avoid regrazing of grazed plants and allow regrowth during the active growing period. Planning for rest periods will vary with the season, climatic conditions and other environmental factors. Rest periods are more critical during periods of active plant growth to allow the plant to replenish and store energy and provide for residual carryover.

Plant communities within the shortgrass prairie ecosystem evolved under continual disturbance by large grazing animals, fire and rodent activity. Periodically using livestock and fire to disturb areas removes old plant material, stimulates the growth of new plant material and creates the opportunity for new plants to become established.

Soil loss from any range or wildlife developments (reservoirs, pipelines, vegetation treatments) until successfully revegetated would be minimal and short term.

Fire affects plants in different ways. If properly planned and applied to meet management goals, most plants will respond favorably as old plant material is removed and competition reduced as areas of clubmoss are destroyed. Forb production generally increases along with the density of silver sagebrush from resprouting after burning. Burning creates a mosaic of patches increasing the edge effect and plant diversity.

Fire would expose the soil but only for a short time. Also, short term increases in runoff and reduced infiltration would occur after surface litter is destroyed.

Alternative 3: As grazing is eliminated, all vegetation would be allocated to wildlife, watershed protection and plant maintenance. Grazing by livestock would be periodically used as a wildlife habitat management tool.

Eliminating grazing was proposed as an alternative under the assumption that livestock/wildlife conflicts could not be resolved through changes in the stocking rate and timing and duration of livestock use, and without grazing, immediate improvements in vegetation condition would occur, upland productivity would improve and the condition of riparian and wetland areas would improve. Also, without any livestock use, an increase in the amount of residual cover was expected to provide more suitable habitat for wildlife. In some instances, this would certainly occur. However, existing shortgrass prairie communities, especially those dominated by blue grama and clubmoss, are slow to respond to management changes and although more residual cover would be available, the quality, in terms of height and density, would be less than optimal.

The most dramatic changes, where plant succession can be influenced causing a shift to later successional plant communities, taller grass species and a diverse mix of grasses, forbs and shrubs, are brought about through disturbance. A combination of animal impact from grazing associated with fire, which has always been a part of an evolving shortgrass prairie ecosystem, would do more to improve the quality and quantity of residual cover and rangeland health than removing grazing altogether.

The 1995 range survey brings out these differences. In comparing fully stocked, lightly stocked and areas rested for over 20 years, there was little difference in the range condition rating and the amount and kind of plants. There was however, a major difference in the vegetation component on the site that was mechanically disturbed.

In addition, existing riparian and wetland plant communities are functioning properly, are healthy and have reached their potential. Since this condition exists under current management, no improvement would occur with the elimination of grazing. However, what is more important is the timing of vegetation removal and duration of use by livestock. These impact seasonal availability of emergent vegetation and upland cover adjacent to riparian and wetland areas.

From Farming

Alternative 1 (Current): Soils could be negatively impacted by Alternative 1, which provides for continued farming at Lonesome Lake. Though difficult to quantify, dry farmland is inherently more susceptible to wind and water erosion than native rangeland, primarily due to the fallow ground common in dryland crop rotations and lack of topsoil structure. As a mitigative measure, all Lonesome Lake farm lessees currently incorporate conservation farming practices in their operations, including strip farming, minimum or no till farming, chemfallow and residue management. Vegetation would not be impacted under Alternative 1.

Alternative 2 (Preferred): Within the Lonesome Lake core area, farm leases would be renewed for 10 years and subject to review and modification following the initial 10-year lease term. During farming tenure, impacts would be the same as Alternative 1. If farming is phased out, impacts would be the same as Alternative 3, below.

Alternative 3: Soils and vegetation would be impacted positively under Alternative 3. Farming would be phased out over a 5 year period and perennial vegetation reestablished, thereby minimizing the erosional effects of farming. Re-establishment of perennial grasses would reduce the wind and water erosion potential by providing a permanent vegetative ground cover and gradually increasing the organic matter content of the soil. In addition, topsoil structure would be beneficially modified by the addition of organic matter, a permanent root mass and the cessation of repeated tillage. Due to a history of repeated cultivation, topsoil of small grain dry farmland is generally structureless. In recent years, the advent of conservation farming practices such as minimum and no till farming has improved topsoil structure, organic matter and vegetative surface cover.

From Wildlife Habitat/Shortgrass Prairie

Alternative 1 (Current), Alternative 2 (Preferred), Alternative 3: No impacts would occur.

From Recreation

Alternative 1 (Current): Off road vehicle travel would continue to be unrestricted. The risk of introducing and spreading noxious weeds into the area would increase slightly. A slight increase in localized soil erosion and vegetation damage would occur from driving cross country and where new trails are started.

Alternative 2 (Preferred) & Alternative 3: No impacts would occur.

From Land Adjustment

Alternative 1 (Current): No impacts would occur.

Alternative 2 (Preferred): Alternative 2 provides for the disposal of farmland outside the core area and acquisition of land within the core area from willing land owners. Disposal of farmland outside the core area would likely result in long term farming of these lands because farming delivers the highest economic return. Impacts to soils and vegetation would be the same as those from farming under Alternative 1, though all impacts would be outside the core area. Acquisition of lands within the core area would have a positive effect on soils and vegetation if they had been farmed by the previous owner; BLM would reestablish permanent vegetation to provide additional wildlife habitat and reduce soil erosion.

Alternative 3: Farming would be eliminated from all public lands under Alternative 3. Impacts to soils and vegetation would be the same as those from farming under alternative 3.

From Mineral Materials

Alternative 1 (Current) & Alternative 2 (Preferred): Low levels of expected development could slightly decrease condition of vegetation and soils until revegetation occurs.

Alternative 3: Soils and vegetation would not be affected.

From Oil & Gas Leasing

Alternative 1 (Current): Low levels of expected activity could slightly decrease condition of vegetation and soils until revegetation occurs.

Alternative 2 (Preferred): Impacts would be negligible due to standard and special stipulations.

Alternative 3: Soils and vegetation would not be affected.

IMPACTS TO WATER RESOURCES

From Grazing

Alternative 1 (Current): Under long periods of grazing use water quality would be impacted through overuse or removal of vegetation acting as a filter for sediments, bank sloughing and trailing where slight increases in erosion would occur.

Alternative 2 (Preferred): Grazing management strategies to enhance the vegetation resource would improve water quality by leaving adequate vegetation at the end of the grazing season to filter and reduce sediment flow into reservoirs and Lonesome Lake, maintain emergent vegetation cover around reservoirs and by preventing trampling and trailing along shorelines.

Alternative 3: Using grazing as one tool capable of altering the vegetation resource would be severely reduced. Extensive areas of clubmoss and blue grama limit infiltration favoring plants that are less efficient in their use of moisture.

From Farming

Alternative 1 (Current): The watershed contributing to Lonesome Lake is 288 square miles; the 2,120 acres of public land leased for farming is 3.3 square miles, or 1.1% of the total. The vast majority of the private land within the watershed is utilized for farming. Soil erosion from farmland does increase turbidity of surface runoff and cause off-site sediment accumulation. But, impacts from farming the 2,120 acres of public land at Lonesome Lake would be considered inconsequential due to the small percentage of the total watershed.

Alternative 2 (Preferred): Disposal of farmland outside the core area would result in the same impacts as described under Alternative 1. Acquisition of land within the core area would preserve permanent vegetative cover.

Alternative 3: Establishing permanent vegetation would likely reduce soil erosion and improve water infiltration.

From Wildlife Habitat/Shortgrass Prairie

Alternative 1 (Current), Alternative 2 (Preferred) & Alternative 3: No impacts would occur.

From Recreation

Alternative 1 (Current), Alternative 2 (Preferred) & Alternative 3: No impacts would occur.

From Land Adjustment

Alternative 1 (Current), Alternative 2 (Preferred) & Alternative 3: No impacts would occur.

From Mineral Materials

Alternative 1 (Current) & Alternative 2 (Preferred): Mineral material mining can create a short term impact if water collects in deep excavations and becomes saline. After reclamation, there is no residual impact to water quality.

Alternative 3: No impacts would occur.

From Oil & Gas Leasing

Alternative 1 (Current) & Alternative 2 (Preferred): Oil and gas development has some potential to impact surface water or groundwater, mainly through removal of vegetation and soil disturbance. In addition, Onshore Oil and Gas Orders 1 and 2 and other standard requirements provide for casing and cementing of the wellbore to prevent contamination of aquifers, lining surface pits when necessary to protect water, plugging wells when abandoned and revegetating well sites.

Alternative 3: No impacts would occur.

IMPACTS TO WILDLIFE

From Grazing

Alternative 1 (Current): Grazing areas season long or long duration use would contribute to a loss of wildlife habitat. Heavy use levels would limit carryover of residual cover going into the winter and impact wildlife species dependent on spring nesting and escape cover. Scheduling livestock use or allowing periods of extended use during the spring and early summer in riparian and wetland areas would remove emergent vegetation during critical nesting and brood rearing periods. Wildlife dependent on different shortgrass successional stages would suffer from lack of diversity.

Alternative 2 (Preferred): Grazing strategies designed to avoid wildlife conflicts and improve overall vegetation health and condition would benefit wildlife. Grazing would be used to create a mosaic of grazing use patterns and successional stages to furnish the habitat requirements of the widest variety of shortgrass prairie dependent species.

Big game species would see improvement in spring/summer forage with improvement of plant species diversity, especially with an increase in the forb component.

This alternative would favor native game birds but substantial increases in numbers would not be expected.

Alternative 3: Wildlife would not suffer directly from this alternative but species dependent on different successional stages would suffer from lack of habitat diversity. Clubmoss would continue to limit cover, production and diversity of vegetation which would in turn limit wildlife species diversity and yearly production.

From Farming

Alternative 1 (Current): No impacts would occur.

Alternative 2 (Preferred): Improved farm conservation practices will improve habitat for some wildlife species over current practices.

Alternative 3: If tracts are seeded to native shortgrass prairie species it will benefit native wildlife species by making it less attractive for non-natives (starlings, pheasant) and opportunistic predators (red fox, skunk, raccoon).

From Recreation

Alternative 1 (Current): No impacts would occur.

Alternative 2 (Preferred): Any increased recreational use would disturb wildlife. Impacts would be minimized by directing the public away from sensitive areas.

Alternative 3: Some benefit would result since recreational use would be limited and more restrictive.

From Land Adjustment

Alternative 1 (Current): No impacts would occur.

Alternative 2 (Preferred): This alternative would simplify management actions and make implementing wildlife habitat improvements easier. Land acquisitions could benefit wildlife by providing larger blocks of adjoining habitat and converting farm lands and seeded pastures to native vegetation.

Alternative 3: Land acquisitions could benefit wildlife by providing larger blocks of adjoining habitat and converting farm lands and seeded pastures to native vegetation.

From Mineral Materials

Alternative 1 (Current): Minor short term habitat loss could occur.

Alternative 2 (Preferred): The one mile limitation would restrict minor short term habitat loss to upland areas.

Alternative 3: No impacts would occur.

From Oil & Gas Leasing

Alternative 1 (Current): Minor short term habitat loss could occur. However, standard stipulations would prevent damage to important wildlife habitat and any disturbance would be localized and minimal.

Alternative 2 (Preferred): Standard and special stipulations would prevent impacts to important habitat.

Alternative 3: No impacts would occur.

IMPACTS TO RECREATION

From Grazing & Farming

Alternative 1 (Current) & Alternative 2 (Preferred): Conflicts between livestock and farming and recreation users could occur during periods of seasonal overlap. This may reduce the recreational experience of the public land user. However, the chance of this occurring would be slight.

Alternative 3: No impacts would occur.

From Wildlife Habitat/Shortgrass Prairie

Alternative 1 (Current): No impacts would occur.

Alternative 2 (Preferred): The quality of recreation would be enhanced by increasing wildlife viewing. Hunting opportunities would stay the same. Providing a centrally located visitor information point with a short, self-guided walking path would improve the viewing opportunities, education and appreciation of wildlife species using the area.

Alternative 3: A decrease in recreation opportunities would occur from more restrictive hunting, off road vehicle travel restrictions and no camping.

From Land Adjustment

Alternative 1 (Current): No impacts would occur.

Alternative 2 (Preferred): Under Alternative 2, the BLM could acquire private land from willing landowners within the Lonesome Lake core area. Acquisition of private land would increase access and recreational opportunities at Lonesome Lake.

Alternative 3: No disposal of public land would occur under this alternative. Acquisition of private land would increase access and recreational opportunities at Lonesome Lake.

From Mineral Materials

Alternative 1 (Current) & Alternative 2 (Preferred): Mineral material mining would have an impact on recreation, primarily hunting. This would be short term, 5 years or less, until reclamation is completed.

Alternative 3: No impacts would occur.

From Oil & Gas Leasing

Alternative 1 (Current) & Alternative 2 (Preferred): Oil and gas exploration and development activities could have a temporary, negative impact on recreation. Upgrading roads, new road construction and pipeline construction would displace some wildlife and affect hunting activities. The quality of recreation could be lessened by the intrusion of oil and gas activities.

Alternative 3: Compared to current leasing provisions, Alternative 3 would produce improved recreational opportunities by eliminating oil and gas related disturbances.

IMPACTS TO CULTURAL RESOURCES

From Grazing, Farming, Wildlife Habitat/ Shortgrass Prairie, Land Adjustment

Alternative 1 (Current), Alternative 2 (Preferred), Alternative 3: Under all alternatives, the archaeological and heritage values of the cultural sites in the Lonesome Lake area would affect management. Federal law requires that such sites be considered in advance of any new impacts. New construction would therefore be designed and located to avoid adverse impacts to these sites. Regulatory signing and/or routine law enforcement patrols might be needed to prevent vandalism of cultural sites.

From Mineral Materials

Alternative 1 (Current) & Alternative 2 (Preferred): A cultural resource inventory would be conducted on proposed mineral material mining areas. Where impacts to cultural resources are likely, mitigation measures would be employed to minimize impacts.

Alternative 3: No impacts would occur.

From Oil & Gas Leasing

Alternative 1 (Current) & Alternative 2 (Preferred): In most cases, direct impacts to cultural resources from oil and gas could be avoided. Inventorying lands could create a positive impact by increasing the amount of cultural resource site information. Additional development could create adverse impacts for cultural properties through additional disturbance. In most cases, these impacts can be mitigated through avoidance or information recovery.

Alternative 3: No impacts would occur.

IMPACTS TO ECONOMIC & SOCIAL CONDITIONS

From Grazing & Farming

Alternative 1 (Current): No impacts would occur.

Alternative 2 (Preferred): Grazing and farming would continue in this alternative. In the long term farming would be phased out and tracts restored to native prairie. If tracts are returned to native prairie, the acres farmed in the area would be reduced with a loss in annual economic activity estimated at $102 for each acre returned to native prairie.

Alternative 3: This alternative would cause substantial changes in the current economic activity of the area. Until habitat surveys were completed and management plans prepared, final effects on grazing are impossible to accurately forecast. If grazing were eliminated entirely, losses in economic activity in Chouteau County would be $450,000 or about $154 per AUM.

Conversion of 2,120 acres of public lands from annual grain production to permanent grassland would result in a reduction in gross farm income of about $118,000. Economic effects of farming on the local and regional economy is estimated at $217,000 or about $102 per acre. This adverse impact might be reduced, however, or improved somewhat by phasing in future changes. Farming might also be used for some years to convert tracts of crested wheatgrass to native grassland or dense nesting cover.

From Wildlife Habitat/Shortgrass Prairie

Alternative 1 (Current), Alternative 2 (Preferred) & Alternative 3: No impacts would occur.

From Recreation

Alternative 1 (Current): No impacts would occur.

Alternative 2 (Preferred): This alternative would most likely draw recreational use away from other areas and is not expected to result in a measurable change in annual economic activity. Social well being of the area residents would not be affected.

Alternative 3: This alternative could increase hunting by approximately 75 hunter-days and wildlife observation and other recreational uses by about 200 visitor-days. This would generate about $3,223 in annual economic activity ($14.44/hunter-day and $10.70/visitor-day).

From Land Adjustment

Alternative 1 (Current): No impacts would occur.

Alternative 2 (Preferred) & Alternative 3: Any purchase of private lands from willing sellers would result in a loss to the local tax base of the county. This would be partially offset by *Payments in Lieu of Taxes* (PILT) back to the counties.

From Mineral Materials

Alternative 1 (Current) & Alternative 2 (Preferred): Mineral material mining would continue to meet local demand.

Alternative 3: Under this alternative mineral material mining would not be allowed. This could increase haul and maintenance costs for local road construction.

From Oil & Gas Leasing

Alternative 1 (Current) & Alternative 2 (Preferred): A new oil or gas discovery would increase economic activity in the short-term during field development and in the long-term during production. Unless a major discovery occurs, development activity would be on a small scale and would not cause significant impacts.

Alternative 3: Any revenue generated from oil and gas development under Alternatives 1 and 2 would be lost.

CHAPTER 5
CONSULTATION AND COORDINATION

INTRODUCTION

This chapter describes the public involvement process for the Lonesome Lake plan amendment and environmental assessment (EA) and the consultation between federal and state agencies. Public participation and involvement are listed chronologically in Appendix E. Complete records of public comments and meetings are available for review in the Havre Resource Area office, Havre, Montana.

Coordinated Resource Management Group

Because of the interest and conflicts over the management direction for the area following release of the *draft EA* in October 1994, a Coordinated Resource Management (CRM) group was formed to identify management issues, help resolve resource conflicts and provide recommendations for future management.

CRM groups are often used to enable various interest groups to reach agreement or consensus on natural resource issues through a collaborative effort. The CRM group formed at Lonesome Lake consists of grazing and farming lessees, sportsman, wildlife organizations, Bureau of Land Management (BLM), Montana Department of Fish, Wildlife and Parks (MDFWP), US Fish and Wildlife Service (FWS) and the Natural Resources Conservation Service (NRCS).

Appendix B lists the goals and objectives recommended and agreed to by the members of the CRM group.

DISTRIBUTION LIST

The list of organizations, agencies and individuals that received this document can be found in Appendix F.

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PUBLIC COMMENTS

This section addresses the public comments received on the *draft EA* and the BLM's responses to those comments. All comments, written or oral, were reviewed and considered.

Comments that presented new data, questioned facts or analysis or raised questions or issues bearing directly upon the alternatives or environmental analysis were responded to in this *final EA*. Comments expressing personal opinions or statements were considered but not responded to directly.

During the comment analysis process, all comments were categorized and coded into seven areas of concern. These broad categories are listed below:

Economics
Recreation
Other
Waterfowl/Water
Vegetation
Farming/Grazing
Alternatives

Each comment from the public meetings and letters that required a response were numbered to correspond with the appropriate comment/response number. Appendix G contains the list of individuals and/or organizations commenting on the *draft EA*.

CATEGORY - ECONOMICS

E3 Comment: The EA should consider the impact of Alternative 3 on private businesses. {2}

Response: The potential impacts on the local economy were considered in Chapter 3 of the *draft EA*. Under Alternative C, there could be an overall reduction of economic activity for the local economy of approximately $537,000.

E5 Comment: The economic impacts on the area was underestimated in the analysis. Need to consider "domino-effect," on schools, private businesses, jobs, etc. {4, 6, 8, 15, 70, 150, 179}

Response: The economic activity for the local economy was estimated at $540,702 from annual gross crop and livestock returns of $268,534 (Appendix D in the *draft EA*). The economic activity was estimated using multipliers to account for the secondary effect on agricultural suppliers, financial services, and other businesses.

E7 Comment: What compensation will the Federal agencies provide to offset the negative financial impact? {5, 7, 95, 96, 98, 100, 101, 106-118, 124-132, 137-140, 143, 168, 169, 177, 178}

Response: The BLM does not have the authority to compensate individuals for financial losses.

E9 Comment: The EA did not address the fact that Reclamation (government) uses the revenue earned by farm and grazing leases. Who will make up for the net loss of revenue to the taxpayer from current leases. {10, 54, 78, 79}

Response: Agricultural permits for farming and grazing in the Lonesome Lake area generated $16,977 for the U.S. Treasury in fiscal year 1991, to be credited towards repayment of the Lower Marias Project (Tiber Dam) construction costs (*draft EA*). Receipts from grazing and farming would continue to go to the U.S. Treasury but would not be credited towards the construction costs for Tiber Dam. No provisions are made to compensate for any net loss in receipts.

E10 Comment: Is Tiber Dam (Lake Elwell) financially affected by this process? {10, 73, 79}

Response: Tiber Dam would not be financially affected under any of the alternatives.

E15 Comment: Need to do a cost-benefit analysis for all alternatives. {80}

Response: While the EA does disclose potential socioeconomic, environmental and cultural impacts of the alternatives, it would be extremely subjective to attempt quantifying the monetary benefits and costs of the alternatives. The weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary analysis and should not when there are important qualitative considerations (40 CFR 1502.25).

E16 Comment: What is the economic impact to farmers as they "donate" their crops to more waterfowl (waterfowl eat grain). {87}

Response: Depredation of small grains by waterfowl on private land is sometimes a problem where crops are grown in close proximity to large wetland areas. Depredation is not expected to increase beyond past levels. Changes in agricultural practices (eliminating the swathing of grain) in the surrounding area has significantly reduced fall depredation problems. *Draft EA*, page 33.

E17 Comment: What will it cost farmers to control weed problems that will come with waterfowl? {87}

Response: The BLM would be responsible for weed control costs on public land and farmers would continue to be responsible on private lands.

E20 Comment: Enhancement to the local economy has been ignored/underestimated. Big Sandy can be a "natural history" area and attract tourists, hunters, bird-watching, cultural, etc. {65, 141, 161, 162, 175, 183, 187, 201}

Economic analysis needs to be broader in scope. Wildlands have economic value. The EA underestimated value of restoring area to wildlands. The wildlife area has a qualitative value (economic) and that was not recognized, as well as tourism. {146, 155, 161, 183, 200}

Response: The *draft EA* addressed the potential increase in recreational use of the area with some non-consumptive use such as bird watching or hiking. In addition, the large number of cultural resource sites would also attract visitors. This would mostly likely draw recreation use away from other areas and is not expected to result in a measurable change in annual economic activity (*draft EA*).

E23 Comment: Economic analysis has used incorrect AUM numbers. {146}

Response: The economic analysis in the *draft EA* assumed an average AUM per acre of 0.15 for a total of 2,100 AUMs. The *final EA* has been revised to reflect the current level of use, 2,917 AUMs. .

E27 Comment: Economic loss from grazing receipts is based on assumption that "cattle could not be supported elsewhere in area if land withdrawn from grazing." This may not be entirely accurate. Much of the area currently under CRP may soon expire and - these lands could be used for grazing. {161}

Response: It is very difficult to project how ranchers would adjust their operations given a change in animal unit months (AUMs). It was assumed that the most likely response to a decrease in AUMs would be to reduce the size of the ranch operation. The economic analysis is based on the potential loss if grazing were eliminated entirely under Alternative 3. The *final EA* has been revised to reflect the potential that some of the economic loss could be avoided if substitute grazing was available nearby but this is not certain.

E28 Comment: The use of the multiplier to determine total economic activity is severely overvalued since it does not take into consideration money lost to the community for lease payments. {161}

Response: The impact multipliers are from the Cooperative Extension Service's *Big Sky Economics, Agriculture and Montana's Economy* (October 1984). Multipliers take into account the interdependencies among the economic sectors including money (business activity) leaving the local area.

CATEGORY - RECREATION

R2 Comment: If hunting has no impact on waterfowl, why are there limits and hunting seasons? {4}

Response: Migratory waterfowl seasons and limits are regulated by the U.S. Fish and Wildlife Service. Evaluation of impacts to waterfowl populations from hunting is beyond the scope of this document.

R3 Comment: Who will build and maintain the "new" site (i.e., parking lots, interpretation, garbage dumpsters, etc.)? {6, 54, 59, 66, 76}

Response: BLM would have responsibility for upkeep. This might be achieved through use of volunteers, cooperative agreements with local groups or funding from the BLM. The level of development expected is described in Chapter 2 in the Recreation section under the preferred alternative.

R4 Comment: Although aware of the popularity of hunting and wildlife viewing in the area, everyone can pursue those interests at the present time (current management). {8, 15, 122, 151, 152}

Options under Alternative 2 for recreation (viewing) are available under current management (Alternative 1). {136, 151}

Response: Under each alternative some level of recreation development and use would occur. If current management were to continue, any opportunities to improve existing recreation use or create additional opportunities would not be pursued. Whereas, under the preferred alternative, the BLM proposes to improve the recreational resource and take steps to manage it such as restricting off road vehicle use and camping. Refer to Chapter 2, Table 2.1 which summarizes what activities would occur under each alternative.

R10 Comment: Specify what 40 percent will be open for hunting. {151}

Hunting should be open for all after September 1; with exception of a small area for waterfowl. {201}

Response: Under the modified preferred alternative in the *final EA*, all public lands within the Lonesome Lake area would be open to hunting, within the regulations issued by the Montana Department of Fish, Wildlife, and Parks.

R12 Comment: Camping is an appropriate use of these lands. May be curtailed during nesting-brooding. {201}

Response: Using historic use as an indicator, the small amount and timing of camping would not affect nesting sites.

CATEGORY - OTHER

O2 Comment: The goals of Alternative 2 and 3 can be accomplished with continued practices of Alternative 1 along with cooperation between all parties. {3, 80, 121, 152, 174, 184}

Response: The modified preferred alternative in the *final EA* has been developed from public comments and through cooperation as represented by the Coordinated Resource Management group (Appendix B). Taken together, the preferred alternative has been modified to reflect their recommendations continuing with a blend of agriculture and wildlife habitat enhancements.

O3 Comment: How many "new" employees will BLM have to hire to manage this new refuge? {4}

Response: Under the preferred alternative, habitat management would not require hiring of any additional employees.

O4 Comment: Public concerns have been overlooked during the public scoping process. The public took time to review and comment on the document and the agency does not really consider them. {5, 7, 26, 45, 58, 70, 95, 96, 98, 100, 101, 106-118, 123,124-132, 137-140, 143, 151, 168, 169, 177, 178, 181, 189, 198}

Response: All comments, written and oral, are reviewed and considered. Comments on the *draft EA* that presented new data, questioned facts or analysis or raised questions or issues bearing directly upon the alternatives or environmental analysis are responded to in the *final EA*.

For additional information please see response to comment O2.

O5 Comment: We must accept reality of humans in concept of ecosystem management and multiple-use activity. {5, 7, 83}

Response: The National Environmental Policy Act requires the analysis of impacts on the quality of the human environment. Impact analysis of the *EA* includes analysis of proposed management on the local economy and traditional land uses.

O6 Comment: USFWS, BLM, and BOR should suspend their recommendation on Alternative 3. Alternative 1 (current management) should be continued until a "balance" is brought into the discussion. {5, 7, 95, 96, 98, 100, 101, 106-118, 124-132, 137-140, 143, 168, 169, 177, 178, 179, 181}

Response: The public sought a more "balanced" approach by creating a Coordinated Resource Management (CRM) group. This group, represented by various interest groups, worked together to resolve the differences in how the area should be managed and provided recommendations to the BLM (Appendix B). Their recommendations helped considerably in developing the preferred alternative.

O7 Comment: With all the grass and no grazing control - who will be responsible for wildfires? {6, 151}

Response: Under the modified preferred alternative in the *final EA* grazing would continue. The BLM would still have responsibility for suppression of wildfires. As in the past, fire management would be coordinated with grazing and farming lessees and through cooperative agreements with the Department of Natural Resource and Conservation and local fire departments.

O8 Comment: Management needs to take into account multiple-use aspects of the area (hunting, fishing, livestock, wildlife, etc.). {9, 16}

Other uses should be permitted only to the extent they are compatible with and compliment wildlife management objectives. {32}

Response: The modified preferred alternative in the *final EA* is consistent with BLM's multiple use mandate. Future management would still include agriculture while providing for wildlife habitat enhancements, cultural interpretation, recreation and any other values associated with a shortgrass prairie ecosystem.

O9 Comment: Changes from current use will result in a significant impact. An EIS should be done of substantial negative impacts (Citation - page 7, Appendix A). {10, 44, 78, 79, 80, 150, 189, 195, 198}

Response: An Environmental Assessment (EA) utilizes the analysis of various alternatives to determine whether a proposed action would significantly impact the quality of the human environment, thereby requiring an Environmental Impact Statement. This determination is part of the EA Decision Record.

The preferred alternative in the *draft* EA proposed changes in the current land use; specifically eliminating grazing and farming. However, the preferred alternative in the *final EA* would modify existing practices to be more compatible with other public resource values. Refer to Chapter 2, Table 2.1 which summarizes the activities which would occur under each alternative.

O10 Comment: The EA does not satisfy the concerns of users and owners of Ihmsen Well. How will the proposed action affect the well. The well is an irreplaceable water source. {10, 78, 79, 181, 195, 198}

Deviation on number of users (water district) can adversely affect the operation of the system. {150, 195}

Response: At one time, Ihmsen Well was being considered as a source of water to augment Lonesome Lake. Because it is privately owned and used for domestic water, the project has been dropped from further consideration.

O11 Comment: The EA has not justified the need for change (purpose and need). {10, 40, 78, 79}

Response: Refer to Chapter 1, Introduction.

O12 Comment: The EA does not address process of revocation by Reclamation. {10, 78, 79}

Response: Refer to Chapter 1, Issues Previously Addressed.

The justification for the withdrawal was reviewed and in 1994 a recommendation for revocation was forwarded to Congress for approval. Although final approval has not been received, the BLM has assumed all management responsibilities for public lands in the area under a Memorandum of Understanding between the BLM and Reclamation (Appendix A).

O13 Comment: It not only takes water in the lake (to provide wildlife and waterfowl habitat), but a wet year. {10}

Response: Recognizing that Lonesome Lake's ability to fill is based on surface runoff, which varies every year, the management prescriptions developed under the modified preferred alternative in the *final EA* include the use of Lonesome Lake as a migratory stopover in the spring and for brood rearing during wet years.

O15 Comment: The Lonesome Lake area was not withdrawn from public domain for the purpose of wildlife enhancement. {18}

Response: Lonesome Lake and Tiber Reservoir were withdrawn by the Bureau of Reclamation (Reclamation) as part of the Lower Marias River irrigation project. Following completion of a withdrawal review in 1993, Reclamation determined that the lands at Lonesome Lake were no longer serving the purpose for which they were withdrawn. In 1994 the BLM received a notice of withdrawal relinquishment from Reclamation. Following Washington Office and Congressional approval, the withdrawal at Lonesome lake would be revoked and the lands returned to the public domain under the full jurisdiction and multiple use management of the BLM. In the interim, Lonesome Lake withdrawn lands relinquished by Reclamation are being managed for multiple use by BLM under a Memorandum of Understanding between Reclamation and BLM.

O16 Comment: Under Alternative 1, (BLM) already meets the three habitat goals under NAWMP for the PPJV Region. {18}

Response: The goals would be met under any of the alternatives. However, considering the value to waterfowl from Lonesome Lake is as a spring migration stopover, the preferred alternative in the *final EA* emphasizes managing for shortgrass prairie habitat.

O17 Comment: Express Pipeline submitted an application dated October 15, 1993, requesting a right-of-way (ROW) to traverse Lonesome Lake. The EA should consider that Express applied for a route during the planning process. {23}

The Altamont Pipeline certified route passes through the Lonesome Lake area - Sections 12, 13, and 21 - Township 29, Range 11E. This has been revised twice to accommodate cultural sites. The final EA must acknowledge the certified route (Final EIS May 1991). {29, 153}

Altamont seeks clarification as to why they were not involved during analysis considering Altamont's interest in the area with certified/signed Pipeline/EIS. {29}

The EA should acknowledge that plans at Lonesome Lake will not affect the construction or mitigation requirements of the Altamont Project. {153}

Response: The BLM does not anticipate any management actions proposed under the modified preferred alternative to have any impact or change the existing ROW issued to Express Pipeline or the Altamont Pipeline certified route. Refer to Chapter 3, Lands.

O22 Comment: Could the existence of the reservoirs be one reason why Lonesome Lake frequently has no water? {34}

Response: Changes in historical land use, construction of reservoirs that intercept and store water, high evaporation and gravel seams in the lake bottom all contribute to Lonesome Lake's ability to store water later in the year. Refer to Chapter 3, Water Resources.

O24 Comment: A prescribed fire plan should be drafted and implemented after public review. {47}

The EA neglects to consider restoring fire as an ecosystem process. {56}

Response: Prescribed fire would be one of the tools considered and possibly used to meet specific management goals for wildlife and maintenance of rangelands. Any use of prescribed fire would first involve planning by an interdisciplinary team combined with local landowner involvement.

O25 Comment: The preferred alternative is narrow in scope and focuses only on waterfowl production. {56}

Response: The preferred alternative in the *final EA* seeks to benefit both wildlife and livestock while improving rangeland health, providing recreational opportunities and interpretation of cultural resources.

O27 Comment: The EA makes no mention of swift fox, mountain plovers, prairie dogs, or the opportunity to provide habitat for them. {56}

Potential for species extension (55 grassland species in U.S. are listed as T&E; 728 are candidate species; including mammals (i.e., swift fox) and avian species (i.e., Baird's sparrow, ferruginous hawk, etc.). (Studies cited.)

Response: Refer to Chapter 2, Wildlife Habitat/Shortgrass Prairie under the preferred alternative and Chapter 3, Wildlife.

O28 Comment: The leased federal farmland should be taken out of production and restored to prairie grassland. The land should not be sold. {56}

Restoration of farmland should be with native vegetation and monitored for future restoration efforts of mixed-grass prairie. {56}

Response: The long term goal, under the modified preferred alternative in the *final EA*, is to phase out farming and restore the land to native prairie; refer to Chapter 2, Table 2.1.

O29 Comment: What happens to the water table in surrounding areas when Lonesome Lake retains water? (In past, basements have flooded in Big Sandy.) {59, 66}

Response: Actions under the modified preferred alternative in the *final EA* would not change the integrity of Lonesome Lake.

O30 Comment: The EA must show a plan for water. {80}

Response: Refer to Chapter 1, Issues Not Addressed. This section explains the status of the Lonesome Lake habitat projects, Ihmsen Well and the exploratory well. Under the modified preferred alternative in the *final EA*, BLM does not anticipate any significant use, diversion or development of water in the area.

O31 Comment: List specific oil and gas activities that would be permitted. {120}

Response: Refer to Chapter 2, Table 2.1 which summarizes the oil and gas activities for each alternative.

O32 Comment: A monitoring plan should be developed. {120}

Response: Resource monitoring would be scheduled to measure progress toward meeting resource goals and objectives. Also, the Coordinated Resource Management (CRM) group would continue to meet annually to evaluate progress (actions or tasks completed, results of monitoring, etc.) with the opportunity to make future management recommendations and changes.

O33 Comment: The "outdoor classroom" has occurred under current management by the Soil Conservation District and this should be recognized. {122, 151, 152}

Response: The opportunity to use this area as an outdoor classroom would be encouraged and continue whenever the opportunities arise. This could occur through many sources without requiring special permits (NRCS, BLM, conservation districts, MSU Northern, local conservation and agricultural groups).

O34 Comment: Agencies need support of local agriculture community in managing wildlife habitat. Projects developed "in spite" of support are counterproductive. {123, 198}

Response: The BLM intends to continue working on the ground with the grazing and farming lessees, local community, weed district and others to gather support and cooperation to achieve the resource goals for the area.

O35 Comment: Management should stay with BLM. The BLM can manage for both wildlife and agriculture. {133, 148, 179, 181}

Response: Refer to Chapter 1, Issues Previously Addressed which explains status of managing agency.

O36 Comment: The extensive concentrations of archaeology/cultural in the area should be protected under the National Historical Preservation Act. {135}

Response: Inventories in and around Lonesome Lake have revealed high densities of archaeological sites, tepee rings and other stone features in particular. Reclamation and the Montana State Historic Preservation Office (SHPO) have agreed that these resources are eligible to the National Register of Historic Places as an archaeological district. Refer to Chapters 1 and 3, Cultural Resources.

O38 Comment: Are the objectives for land disposal currently available? {136}

Response: Chapter 2, Table 2.1 summarizes the proposed land acquisition and disposal objectives for each alternative. Specific acquisition and disposal criteria can be found in the West HiLine Resource Management Plan, 1988.

O40 Comment: The EA should include a detailed history of land ownership. {141}

Response: The BLM is aware of the historical land use in the area through personal communication with many of the local landowners. This has certainly provided insight into the areas potential, existing resource conditions and how the area might respond to various management practices. Current ownership and land use is described in Chapter 1, Location of the Planning Area and shown on the map at the end of the chapter.

O42 Comment: Opposing parties should develop a new alternative for Lonesome Lake management for wildlife (cooperation, working group). {146, 161, 197}

Response: A Coordinated Resource Management group was formed to allow the different interest groups to reach consensus on issues and management direction for Lonesome Lake. This group would also remain involved to monitor progress and provide future input (Appendix B).

O45 Comment: Question the data and accuracy of the Montana Department of Fish, Wildlife & Parks and US Fish & Wildlife Service monitoring studies. {151}

Response: The only monitoring done to date in the Lonesome Lake area has been completed by the BLM. These are all vegetative studies available for review in the Havre Resource Area. BLM and Audubon wildlife inventories are planned for 1996-97.

O47 Comment: Contradictions (page 31) - no grazing and rest rotation - clarify as to which it will be. {155, 161}

Response: Refer to Chapter 2, Table 2.1 which defines the level of grazing to occur under each alternative.

O49 Comment: No discussion as to which lands might be available for land exchanges and moved out of federal ownership. The EA and/or DR should be revised to list specifically lands available for disposal. {183}

Response: Refer to Chapter 2, Table 2.4 which lists those lands identified for disposal.

O50 Comment: The EA does not provide a central narrative that sets out affected cultural and natural environments or how these values will be strengthened with the preferred alternative; also does not show that the preferred alternative is a low-cost management strategy. {183}

Response: Refer to Chapter 2, preferred alternative and Chapter 4, environmental consequences.

O52 Comment: Management strategies attached to the preferred alternative are not consistent with general BLM management authorities. Questionable whether BLM can manage Lonesome Lake under either current management or direction of preferred alternative. {183}

Response: Through a Memorandum of Understanding between the BLM and Reclamation, the BLM has assumed all management responsibility for public lands in the Lonesome Lake area (Appendix A).

O53 Comment: No information is provided on how the preferred alternative would mesh with the current RMP direction for Lonesome Lake when amended (with selection of preferred alternative). {183}

Response: The preferred alternative would modify the West HiLine RMP addressing recent concerns about land adjustment, oil and gas and mineral development, farming and overall management direction that the RMP did not fully cover.

O54 Comment: Goal of management at Lonesome Lake should be re-establishment of a native prairie in excellent vegetative condition. The goal can be achieved through relatively low-cost management. {183}

Response: Refer to Chapter 2, preferred alternative.

O55 Comment: Management objectives should include "increased recreational opportunities and increased upland game bird production." {201}

Response: Refer to Chapter 2, preferred alternative.

O56 Comment: Conduct some predator control to enhance bird populations. {46, 201}

Response: The predators which have the greatest impact on ground nesting birds and their eggs are red fox, skunks, gulls, and to a lesser extent, raccoons. The gulls are protected under the Migratory Bird Treaty Act and the others are dependent on cover and habitat different from native prairie. These predators and the gulls have benefited from the alteration of habitat by man (tame grass seedings, rock piles, buildings, shelter belts, trash dumps, etc.), and even intense predator control provides only short term benefits as long as the habitat favors these animals. In addition this control quickly becomes cost prohibitive and often reduces species such as coyotes, which compete with opportunistic predators.

O57 Comment: Explore partnerships of Ducks Unlimited, Pheasants Forever, and MDFWP - funding by State Duck Stamps and the Upland Game Bird Habitat Enhancement Program. {42}

Voluntary federal and private cost-share programs should be used to enhance and expand existing surrounding natural nesting areas (In Gallatin County - Fair Weather Fishing Access Management Program). {10, 78, 79, 81, 151}

Response: The BLM would continue to look for any opportunities to develop partnerships with other state and federal agencies and private individuals or groups to improve or provide wildlife habitat in the area.

O58 Comment: Archaeology in area should be expanded for use of general public. {63}

Response: Refer to Chapter 2, Recreation under the preferred alternative.

WATERFOWL/WATER ISSUES:

W1 Comment: If the area is mainly used as a "landing strip for migratory birds," then why make it a refuge? {4}

Response: Transferring the public lands to the US Fish and Wildlife Service for designation and management as a wildlife refuge was one of the alternatives considered but dropped from further analysis.

W2 Comment: This area is not pristine wetland (not "wet") waterfowl habitat. It is a glacial catch basin that only contains water every 7 years. {5, 6, 7, 18, 25, 26, 41, 46, 48, 54, 58, 59, 66, 76, 83, 87, 95, 96, 98, 99, 100, 101, 106-118, 123-133, 137-140, 143, 168, 169, 172, 174, 177, 178, 181, 195}

Lonesome Lake is a dry area. No water to bring in. No water in 12-Mile Coulee. {54, 122, 133, 151, 152, 182, 193}

The part-time absence of water does not preclude the use of the prairie (and as a refuge for prairie birds and animals). There is enough water to harbor waterfowl/wildlife. Important staging area for spring migration. {34, 57, 135, 146, 183}

Response: Lonesome Lake is an ephemeral wetland, and to fill, requires surface runoff. On most years the lake would provide enough water early in the year to serve as a migratory stopover for waterfowl. On wet years, which are infrequent and cyclic, the lake would provide valuable nesting and brood rearing habitat. Management prescriptions would be adjusted each year to conform with the environmental conditions.

W3 Comment: Ducks Unlimited conducted a feasibility study and concluded the area was not hydrologically feasible or economically justifiable to build dikes to increase depth/duration of surface water at Lonesome Lake. {5, 7, 80, 95, 96, 98, 100, 101, 106-118, 121, 122, 123, 124-132, 137-140, 143, 151, 152, 168, 169, 174, 177, 178, 179, 181, 198}

Response: Using the information provided by the report, the BLM does not plan to construct any habitat improvement projects on the lake or build any kind of structures that would impact the integrity of Lonesome Lake as a shallow basin.

W4 Comment: What about the possibility of the lake turning into an alkali slough (saline)? {6, 62, 179, 181, 198}

Response: The modified preferred alternative in the *final EA* does not propose altering water storage or movement in Lonesome Lake.

W8 Comment: The area should be managed for waterfowl and upland game birds with habitat improvements designed to enhance all species. {32, 50, 85, 90, 103}

Response: Future management under the modified preferred alternative in the *final EA* is designed to meet habitat needs for prairie dependent species. Although waterfowl and upland game birds are a component of these systems, management would not necessarily emphasize one wildlife species over another. Management practices would focus on improving biological diversity to provide a wide range of habitat conditions to support a variety of wildlife.

W13 Comment: Neotropical migratory birds are in great danger of population reduction. Habitat improvements will benefit the migration species. {60, 162, 171, 185, 199}

Response: The BLM does not have a complete inventory of wildlife species using the Lonesome Lake area; which includes the group of neotropical migrants. One of our first priorities would be to inventory and identify crucial wildlife habitat for species of concern and other high priority prairie dependent species.

Management, at least initially, under the modified preferred alternative in the *final EA* would be directed at improving biological diversity, rangeland productivity and adjusting the grazing use to provide a mosaic of use patterns to meet seasonal requirements of wildlife.

As additional information becomes available, adjustments in the grazing use along with other steps would be taken to meet habitat requirements.

W15 Comment: Lack of data - The projected differences in production between these management alternatives. Scientific estimates addressing differences in productivity need to be addressed. {77}

Response: The modified preferred alternative in the *final EA* is more of a blend of agriculture and wildlife use where management would benefit prairie dependent species; including waterfowl. Under the preferred alternative, there would not be any loss in wetland habitat and adjustments in the current grazing use would be designed to maintain/protect wetland areas during critical periods.

W16 Comment: The EA fails to meet goals of NAWMP. The EA should contain a report of current populations and an estimate of 1970's populations. {80}

Response: There have been no population or nesting counts in this area, current or historic. The end of droughts in the prairie pothole region, repairing or replacing of drained wetlands, and replacing of farmed fields by CRP in the mid and tall grass prairie regions, has brought waterfowl populations to the highest levels since the early 1970's. Notable exceptions are those species which prefer less cover as in the short grass prairie, such as pintails.

W18 Comment: The only way to increase waterfowl production in Lonesome Lake would be to import large quantities of water from one of our rivers (divert water in lake). {87, 170}

Pipeline (to bring water in area) from Tiber Dam to Rocky Boy. {160}

If water were imported, what would be the environmental impact on surrounding soil structures and chemistry. How would that impact nearby water quality (i.e., domestic wells in area)? {87, 150}

Importing water is wasteful and frivolous use of Montana's water. {46, 87, 149, 152, 159, 165, 193, 195}

Response: Importing water was determined not to be economically feasible or viable due to the porous bottom of the lake bed and high evaporation rates.

W21 Comment: There was no discussion of water rights for the area. {120, 156}

Response: Refer to Chapter 3, Watershed.

W22 Comment: No discussion regarding water quality. Do upstream drainages drain areas which are treated with chemicals which may have adverse impacts to waterfowl? {120, 156}

Response: Measurements of water quality by NRCS and the state of Montana have shown levels of herbicides and fertilizer below those standards recommended by the federal and state governments (personal communication, Clarence Baxter, Natural Resources Conservation Office, Big Sandy, Montana).

W24 Comment: "Habitat Islands" are created without community support. These isolated portions provide easy access to hunting for predators which can be devastating to waterfowl. {123}

Response: Lonesome Lake is a habitat island of shortgrass prairie surrounded by farmland. Management of as large a block of natural habitat and removal of artificial or unnatural predator cover will do as much for ground nesters as is possible without making changes on private lands. Minimizing opportunities to opportunistic predators is addressed in Chapter 4 under Impacts to Wildlife.

W26 Comment: The final EA needs to explain more clearly and thoroughly how the water requirements for wildlife and waterfowl will be provided. {146}

Response: The modified preferred alternative in the *final EA* recognizes the value of Lonesome Lake as a migratory stopover. Management prescriptions would be designed to maintain the integrity of Lonesome Lake as a shallow basin and to protect the habitat around Twelvemile reservoir (west of Lonesome Lake).

W28 Comment: The proposed excavation of Lonesome Lake could have significant impacts on Ihmsen Well disrupting customers' fire protection, domestic use, and water quality. {44, 150, 195}

Response: There are no plans to excavate or construct any habitat projects on Lonesome Lake.

W30 Comment: Be specific and identify what 12 species of mammals and birds occur or may occur. {151}

Response: Refer to Chapter 3, Wildlife Habitat/Shortgrass Prairie.

W31 Comment: There are no "natural" storage basins (page 26). {152}

Response: This statement has been removed from the *final EA*.

W34 Comment: Lonesome Lake could (potential) provide significant breeding habitat for early-nesting species. {183}

Response: Refer to Chapter 2, Wildlife Habitat/Shortgrass Prairie under the preferred alternative.

W35 Comment: In 4 of the last 5 years, Lonesome Lake has had water during the spring and early summer (personal communication, USFWS). Lonesome Lake normally has enough spring water necessary to produce an abundance of pintails and other early-nesting ducks and shorebirds.

The EA needs to do a better job of documenting the present importance of Lonesome Lake to stage waterfowl and potential significance of area to early-season nesters and benefits to specific species of wildlife. {183}

Response: The preferred alternative in the *final EA* has been modified to reflect this information.

VEGETATION

V1 Comment: Potential for increase in weeds. Who will be responsible for conducting weed control (typically lessees took care of weeds). {6, 184, 189}

Response: The BLM, under any alternative, will continue to work toward preventing the introduction and spread of noxious weeds into and within the Lonesome Lake area. Any proposed activities would incorporate weed management strategies to prevent the invasion into new areas and control of existing infestations. The BLM will continue treatment through cooperative agreements with county and grazing and farming lessees.

V3 Comment: The EA does not adequately address the threat of spreading chemical- resistant noxious weeds (Kochia area). {10, 78, 79, 198}

What is environmental impact if wildlife numbers increase on propagate herbicide-resistant strains of common or noxious weeds. {87}

Response: The modified preferred alternative in the *final EA* does not propose any management actions that would encourage the spread of chemical resistant noxious weeds.

V4 Comment: Vegetation of Lonesome Lake is not found in a natural (wetland) nesting area. Consists primarily of club moss. {10, 78, 79, 184}

Surrounding grassland needs some mechanical renovation for it to respond (i.e., tilling). Even ungrazed for summer of '93 showed no improvement. {48, 77}

Western wheat grass and other medium-sized grasses must recover. {146}

Response: Upland areas dominated by clubmoss and blue grama have limited value for those wildlife species needing dense nesting cover and are producing well below their vegetative potential. Clubmoss and blue grama does not respond to changes in management. One of the goals under the modified preferred alternative in the *final EA* would be to use various tools - grazing, fire, mechanical disturbance - to improve the productivity and value of these areas for wildlife and livestock.

V5 Comment: (Summer Fallow) resting should be eliminated (stopped) and native or introduced plants established where farming is inappropriate. {47}

Response: Farming under the modified preferred alternative is described in Chapter 2. Various farming practices would be incorporated into existing farm leases to benefit wildlife or reduce their impacts.

V7 Comment: Lonesome Lake contains wetland/native prairie ecosystem which acts as biological filters for toxins. These areas are rare and should be preserved. {50, 200}

Response: Under the modified preferred alternative in the *final EA* there would not be a loss of shortgrass prairie or wetland habitat in the core management area.

V10 Comment: The EA must clarify relationship between protection of native plant communities and enhancement of wildlife habitat; i.e., conflict between preserving native short grass prairie and enhancing waterfowl habitat by dikes and pasture renovation. {80}

Response: The modified preferred alternative in the *final EA* would allow the use of mechanical renovation as a tool to improve rangeland health and productivity. However, this treatment would only be permitted where compatible with cultural, watershed and other resources values. Under the preferred alternative, no projects are planned to enhance waterfowl habitat on Lonesome Lake.

V12 Comment: What specific practices will be done to enhance residual cover (can't support alternative that does not provide specific practices). {136}

Response: Refer to the Land Use and Wildlife Habitat/ Shortgrass Prairie sections in Chapter 2.

V13 Comment: Many vegetation practices under Alternative 2 and Alternative 3 can currently be done (Alternative 1); i.e., enhance residual cover, protection and enhancement of native plant species, "enhance" and "maximize" vegetation, etc. {136, 151}

Response: Refer to Chapter 2, Table 2.1.

V14 Comment: What specific practices will be done to increase emergent vegetation in permanent and ephemeral water bodies. {136}

Removing grazing and farming will not contribute to the increase of emergent vegetation in any water areas. (Need grazing to keep grass stands from declining.) {136, 184}

The emergent vegetation along shoreline must be protected. (Draw livestock away from riparian areas to do this.) {146}

Response: Adjusting the timing and duration of livestock grazing and providing rest in these areas would be the principle method used to maintain/protect the emergent vegetation around Lonesome Lake and Twelvemile and Lonesome Coulee reservoirs. Livestock use would also be planned to avoid conflicts with waterfowl and shorebird breeding and nesting periods.

V16 Comment: Alternative 3 would "focus on protecting and enhancing short grass prairie habitat". Protecting from what, and what specific practices will be done to do this? {136}

Response: Refer to Chapter 2, Preferred Alternative.

V17 Comment: The EA would restore the diversity of short mid-grass species. What other species have been lost from this ecosystem that can be replaced? {136}

Response: Management practices would focus on improving biological diversity to provide a wide range of habitat conditions to support wildlife and improve the forage base for livestock. In the *draft EA* we did not mean to imply that any plant or animal species have been lost. Only that, through a change in management, diversity may be improved on some sites to see an increase in the forb and shrub component, a shift to taller grass species or provide a variety of age classes. Suggesting that a more diverse plant community would provide more diverse habitat for a variety of wildlife species to occupy.

V19 Comment: Be specific in referring to areas where damage has occurred (page 24 reference). {151}

Response: The text throughout the document has been modified to reflect the data provided by the range survey (1995) and resource monitoring completed by the BLM. Most of this information can be found in Chapter 3 under the various resource sections.

V21 Comment: The EA did not consider what bio-agents are available for noxious weeds and also other aspects of weed control (use of herbicides in aquatic areas, mowing, etc.). {189}

Response: The BLM will continue with an integrated approach, where all weed management practices are considered for use. Biocontrol agents are one method that would be used but not necessarily the first or only choice if other options or treatments would be more effective.

V22 Comment: On page 29 the EA states, "There are no significant noxious weeds." Contrary to the EA, there is Russian Knapweed, spotted Knapweed, etc. {189}

Response: Thank you. The Havre Resource Area office now maintains a map showing noxious weed infestations which will be updated annually. We have also located baby's breath along the county road just north of Ihmsen Well.

V23 Comment: The EA fails to address weed seed carried by migrating waterfowl, predators, etc., with Alternatives 2 or 3. {89}

Response: Wildlife transport of weed seeds is unavoidable under all alternatives. Emphasis will be on early detection and treatment of new infestations.

V24 Comment: Road closures in and of themselves will not "maintain" levels of noxious weeds (EA, page 31). {189}

Response: Reviewing which roads should be open and closed and preventing cross country vehicle travel would help in preventing the introduction of noxious weeds into a new area. Prevention measures would also be developed and used for all actions and activities occurring on public land to reduce the potential for introducing and spreading noxious weeds.

V25 Comment: CRP is a good example of what weeds establish when farmland is converted back to grass. It is a long-term problem with perennial weeds such as Canada Thistle. {189}

Response: A strategy for controlling weeds until establishment of desired vegetative cover is achieved will be included when farm tracts are restored to native vegetation.

FARMING/GRAZING

F1 Comment: Elimination of livestock grazing is overkill. Both sides must compromise to devise a long-term solution to the management of this unique area. {9, 16}

Response: Under the preferred alternative in the *final EA*, grazing would continue at a level consistent with the recommendations provided in the range survey (1995).

F2 Comment: Crops provide food and cover for wildlife. Wildlife habitat and agriculture are compatible. {10, 18, 20, 25, 33, 36, 43, 48, 59, 66, 151, 155, 161, 165, 182, 193, 201}

Response: Under the preferred alternative in the *final EA*, grazing and farming would continue with current practices modified to be more compatible with other resource values.

F3 Comment: Phase-out livestock grazing...to be replaced by what? {28, 42}

A return to grazing after being phased-out is difficult; both politically and functionally. {77}

Response: Under the preferred alternative in the *final EA* the level of grazing would be adjusted but not phased out or eliminated.

F4 Comment: Livestock grazing should be eliminated from wetlands. The EA provides conflicting statements. {28}

Response: The *final EA* has been modified to more clearly state what actions would occur under each alternative. Refer to Chapter 2, Table 2.1.

F5 Comment: Grazing should not be permitted until the area has recovered (need changes in grazing). {33, 159, 183}

An alternative which promotes prairie ecosystem restoration. {56}

Alternative management methods (for grazing) should be considered - seasonal use, limits, moving/rotation, etc. {146}

Response: Shortgrass prairie ecosystems in the Northern Great Plains have evolved under historical grazing use by large herbivores. Rather than eliminate grazing as proposed under the *draft EA*, the preferred alternative in the *final EA* proposes using grazing strategies that would simulate historical grazing patterns and use. Plans include shorter grazing periods, higher intensities of use and rest. Grazing use would be planned to protect emergent vegetation around wetlands.

F6 Comment: Implementation of a carefully planned grazing system is a more appropriate strategy to develop the potential of the area...modifications should address specific wildlife habitat needs, especially residual nesting cover - budget/management plans. {36, 43, 155, 160, 161, 170}

Response: The preferred alternative has been modified to meet habitat needs of prairie dependent species.

F7 Comment: Overgrazing in the area makes it critical to make some changes in Lonesome Lake. {39, 61, 105, 159, 183, 185}

The EA only hints at the unacceptable condition (overgrazing). Lonesome Lake has undergone severe impacts from livestock grazing. Disclosing condition of allotments as "fair" understates impacts. {183}

Response: The modified preferred alternative in the *final EA* would attempt to simulate historical grazing use in upland areas by implementing shorter grazing periods, higher intensities of use and increased stock densities to provide animal impact. These types of strategies are distinct changes from the use now occurring.

Overuse of forage by livestock is a function of time. Typically, adjustments in the timing and duration of use and planning livestock grazing periods to avoid critical wildlife periods would enhance other resource values. However, existing plant communities in the Lonesome Lake area require some type of disturbance (animal, fire, mechanical) to bring about a change in the condition or a shift to another plant community.

F9 Comment: Under "Alternatives Considered But Dropped..." - Maximum Commodity Production - states that land only capable of a marginal increase in livestock production. This shows lack of understanding of native grasses. {75}

The statement that it, "would not be in the public's best interest to encourage production that the government is paying farmers to reduce" is not accurate. {75}

Statement - Maximum commodity production "lacked economic viability" is not accurate. {75}

Response: These statements have been revised or removed from the *final EA*.

F13 Comment: Data shows that rest rotation can be beneficial to waterfowl management. {77, 201}

Response: Rest rotation along with other grazing systems and specific grazing prescriptions would be considered under the modified preferred alternative in the *final EA*.

F16 Comment: Alternative 2 discusses stocking rates with vegetation objectives. This is done under current management (Alternative 1). {136}

Response: Chapter 2, Table 2.1 illustrates the differences for each alternative.

F17 Comment: Alternative 3 would "Significantly reduce livestock grazing" but the EA doesn't specify what level it will be reduced to. Just by reducing grazing doesn't mean more vegetation. {136}

Response: The preferred alternative has been modified in the *final EA* to propose an adjustment in the grazing practices occurring at Lonesome Lake rather than phasing out or eliminating grazing.

F19 Comment: What specific stipulations on farming practices will be done to provide soil/water conservation and enhance wildlife? Are they available under current management? {136}

Response: Refer to Chapter 2, Farming under the preferred alternative.

F20 Comment: Under Alternative 3, no reason is given to phase-out the current farming activities or make reference to objectives which are to be met by phase-out. {136}

Response: The preferred alternative in the *final EA*, having been modified, allows farming to continue for another 10 years. When the leases expire, they would be reviewed and subject to modification based on consistency with the management goals and current BLM policy and regulations. Options would range from continuing to farm to eliminating farming.

F21 Comment: Specify which allotments would have activity plans? {151}

Response: Refer to Chapter 2, Grazing under the preferred alternative.

F22 Comment: Clarification: Is the 1,600 of public land (in ARP) leased for farming out of the total of 2,197 acres leased for farming (page 16)? {156}

Response: The Acreage Reduction Program (ARP) was a component of the 1985 Food Security Act which is now obsolete. The Freedom to Farm Act is new farm legislation enacted in 1996; producers may sign up for the program between May 20th and July 12th, 1996. The 2,197 acres included the 1,600 acres.

ALTERNATIVES

A2 Comment: Under Alternative 3 farming should be permitted where it can enhance wildlife; and the USFWS should be given management authority at Lonesome Lake. {11, 17, 37, 38, 47, 57, 65, 68, 71, 89, 92, 93, 94, 97, 103, 105, 119, 134, 142, 145, 157, 158}

Response: See response to comment W1 and Chapter 2, Farming under the preferred alternative.

A3 Comment: Lonesome Lake should be under USFWS. BLM does not have expertise, plus has allowed overgrazing, etc.). {12, 21, 24, 28, 30, 31, 33, 34, 35, 39, 42, 52, 55, 67, 69, 91, 104, 135, 144, 147, 155, 160, 161, 162, 164, 166, 167, 170, 171, 173, 175, 183, 185, 186, 196, 199}

Response: Refer to Chapter 2, Wildlife Refuge. Also, see response to comment F7.

A4 Comment: Some grazing/farming should be allowed as integral part of area with wildlife management as primary purpose. Allow cropland to be used for grain to supplement feed to reduce reliance on surrounding fields. Grazing to mimic natural grazing patterns. {20, 21, 49, 53, 54, 81, 82, 85, 144, 146, 155, 160, 161, 162, 170, 171, 175, 185, 196, 201}

Response: Refer to Chapter 2, preferred alternative.

A5 Comment: Manage Lonesome Lake as a National Wildlife Refuge. {24, 28, 30, 31, 33, 35, 37, 42, 51, 52, 53, 54, 67, 69, 71, 89, 93, 104, 155, 161, 171}

Manage as a wildlife refuge but allow a portion of refuge open for waterfowl hunting and entire refuge for upland bird and big game hunting. {173, 175}

Response: Refuge designation is not within BLM jurisdiction or within the multiple use mandates of the agency.

A7 Comment: Alternative 2 - grazing management should contain specific recommendations to promote soil and water conservation practices and enhance vegetation conditions - rest rotation grazing system; reduced stocking levels - when the vegetation objectives are met. Alternative 2 would continue to provide widest range of recreation opportunities without unnecessary proposed constraints of Alternative 3. {36, 43}

Response: Refer to Chapter 2, Grazing under the preferred alternative.

A8 Comment: We recommend that any proposed land disposal/trade or mineral exploration activities be conditioned to reflect the wildlife and habitat values. {36, 43}

Response: Wildlife and habitat values would be analyzed for these and many other activities. Refer to Appendix D, Oil and Gas stipulations.

A9 Comment: New pits should be dug around the edge of the lake bottom in locations where they would catch run-off water from surrounding grasslands. {48}

Response: Under the modified preferred alternative in the *final EA*, management actions would be designed to maintain Lonesome Lake as a shallow basin. Constructing pits within or around the edge of the lake would concentrate and store water in a smaller area reducing the size of the lake bed and wetland area.

A10 Comment: If bottom of lake was planted with a suitable crop would be pasture for cattle and wildlife. {48}

Response: Lonesome lake is a natural ephemeral wetland providing value to wildlife and water quality which could not be replaced with a planted crop. Due to the regular flooding of the basin and the very rocky bottom, this would likely prove to be unproductive and cost prohibitive.

A12 Comment: Herbivory should not be removed, natural part of ecosystem. Cattle grazing should be replaced with bison, the major native ungulate of the region. Bison would be compatible with waterfowl. Daily monitoring of herd could be contracted out to local ranchers. {56}

Response: See response to comment F5. Also, under the modified preferred alternative in the *final EA*, the option would be open for a change in the class of livestock if current or future grazing lessees were willing to convert to bison.

A14 Comment: Prefer public lands in area remain in public ownership but disposal may be appropriate if working toward block ownership pattern in wetlands/wildlife. Use isolated BLM properties elsewhere in state as trading stock. {120}

Response: Refer to Chapter 2, Lands under the preferred alternative.

A15 Comment: Use of directional drilling from non-sensitive locations should be explored as a means of drilling. Not necessary to sacrifice oil and gas potential. {120, 155, 161}

Response: Refer to Chapter 2, Oil and Gas Leasing under the preferred alternative.

A16 Comment: Manage the area for cultural resources - important to history/Native Americans {145, 159, 170}

Response: The modified preferred alternative in the *final EA* would consider ways of educating the public through interpretive displays. Refer to Chapter 2, Cultural Resources under management common to all alternatives and the preferred alternative.

A18 Comment: Sell all public lands to private landowners. {151}

Response: Refer to Chapter 2, alternatives considered but dropped from further analysis.

A20 Comment: Is it necessary to set aside the entire 18,000 acres? {182}

Response: Under the modified preferred alternative in the *final EA* no acres would be set aside.

A22 Comment: Designate Lonesome Lake as an ACEC and provide a program to protect and enhance project area. {183}

Response: During the public comment period on the *draft EA* the BLM received a nomination to consider the Lonesome Lake area for designation as an Area of Critical Environmental Concern (ACEC).

To maintain the planning schedule and commitment to the public, BLM did not include an analysis of the management area to determine if the criteria is met for potential ACEC designation.

If the nomination qualifies for further consideration, per the ACEC criteria, alternatives for special management will be considered through an amendment to the West HiLine RMP.

A23 Comment: The approach for farming under Alternative 2 may provide greater benefits than phasing-out farming (as in Alternative 3). Modifying contracts to assure such benefits farming can provide as suggested in Alternative 2 should also be a component of alternative 3. {83}

Response: The preferred alternative in the *final EA* has been modified to allow farming with existing leases modified to permit farming practices that are more compatible with wildlife.

A24 Comment: Once healthy vegetative stands have reestablished themselves, two principal tools are available and should be used: fire and grazing...recommend they are used in combination.

Grazing allowed on infrequent but intensive basis should have a boundary fence, put on a bid basis system, and should simulate natural grazing patterns. Allowed every 4-5 years.

Fire should mimic the intensity and frequency of fires associated with native prairie. {183}

Response: Refer to Chapter 2, preferred alternative.

A25 Comment: Use perimeter fencing to solve erosion problems from siltation and livestock use. {193}

Response: No erosion problems have been identified by the NRCS or the BLM in this area.

REFERENCES

Bureau of Land Management, 1982. *Prairie Potholes Environmental Impact Statement.* Department of the Interior, Lewistown, Montana.

Bureau of Land Management, 1988. *West HiLine Resource Management Plan.* Department of the Interior, Lewistown, Montana.

Bureau of Reclamation, 1992. *Report of Cultural Resource Reconnaissance at Lonesome Lake, Chouteau County, Montana: MTPO No. LM-92-46.* Department of the Interior, Billings, Montana.

Bureau of Reclamation, 1994. *Draft Environmental Assessment and Plan Amendment. Lonesome Lake Prairie Wetlands Project.* Department of the Interior, Billings, Montana.

Bureau of Reclamation, 1995. *Lonesome Lake Range Land Survey Report.* Department of the Interior, Billings, Montana.

Ducks Unlimited, 1993. *Evaluation of Possible Waterfowl Habitat Development Alternatives for the Lonesome Lake Complex.* Prepared by Ducks Unlimited Great Plains Regional Office.

Hansen, Paul L., Robert D. Pfister, Keith Boggs, Bradley J. Cook, John Joy and Dan K. Hinckley, 1995. *Classification and Management of Montana's Riparian and Wetland Sites.* Montana Forest and Conservation Experiment Station, School of Forestry, University of Montana, Missoula, Montana.

National Academy Press, 1994. *Rangeland Health. New Methods to Classify, Inventory and Monitor Rangelands.*

Society for Range Management, 1994. *Ecological Implications of Livestock Herbivory in the West.*

U.S. Fish and Wildlife Service and Canadian Wildlife Service, 1986. *North American Waterfowl Management Plan.* Department of the Interior, Washington, D.C., and Environment Canada, Ottawa, Canada.

U.S. Fish and Wildlife Service, 1992. *Prospectus: Lonesome Lake Prairie Wetland Project.* Department of the Interior, Great Falls, Montana.

APPENDIX A
MOU BETWEEN BLM AND RECLAMATION TRANSFERRING MANAGEMENT TO BLM

Memorandum of Understanding
Between
Bureau of Land Management--Lewistown District Office
&
Bureau of Reclamation--Montana Area Office
For
Interim Management of Lonesome Lake Withdrawn Lands Relinquished by Reclamation

No. 4-AG-05050

I. Background and Purpose

The Bureau of Land Management (BLM) and the Bureau of Reclamation (Reclamation) are required by the Federal Land Policy and Management Act (FLPMA) to conduct periodic reviews of lands withdrawn from the public domain by Reclamation. As a result of these reviews, lands are sometimes identified by Reclamation that are no longer serving the purpose for which they were withdrawn. Formal notice is then given to BLM that these lands are being relinquished by Reclamation. BLM then begins the process of revocation, reviewing the case file for the withdrawn area and preparing the public land order that will officially revoke the withdrawal on the specified lands, and return them to the public domain under the full jurisdiction of BLM. It may take extended periods of time to complete this process, based on priorities, planning schedules, public involvement and other similar considerations.

The purpose of this agreement is to facilitate the smooth transfer of management of lands identified for relinquishment in the Lonesome Lake withdrawn area, including the isolated withdrawn tracts, during the period between filing of the relinquishment and the effective date of the Public Land Order formally revoking the withdrawal. The Lonesome Lake area is defined on legal descriptions contained in APPENDIX A. This agreement also covers the disposition of land use agreements that may have been issued by Reclamation and the assumption of administration of those agreements by BLM.

II. Authority

1. The Reclamation Act of 1902 (43 U.S.C. 37)
2. Federal Land Policy and Management Act of 1976, as amended (FLPMA), 43 U.S.C. 1701-1782
3. The Administrative Procedures Act (as amended)

III. Agency Roles

The underlying principle of this agreement is that once Reclamation has formally notified BLM to begin a particular revocation action, management responsibility for the particular tract(s) has begun to transfer to BLM. Recognizing that each tract of withdrawn land is different, and may have greatly different management needs, the transfer of management responsibilities may need to be expedited in some cases. In all cases, within 30 days after BLM receives Reclamation's official notice of relinquishment, BLM will review the lands and initially determine if they are suitable for return to the public domain. A timetable will be jointly established for the completion of the management actions listed below, and any other management actions that both agencies agree that Reclamation or BLM should take to effect the transfer of management. During this review period, if the lands are determined not to be suitable for return to the public domain, BLM will notify Reclamation that the lands are not suitable and will recommend appropriate action(s) needed to make the lands suitable for disposal. Lands unsuitable for return to the public domain will either be rendered suitable for return to the public domain, or they will be subject to disposal by public sale.

IV. Agreement Implementation

This agreement governs the administration of lands relinquished by Reclamation's Montana Area Office in the Lonesome Lake withdrawn area, from the time that formal notification of relinquishment is given to BLM, until the public land order is signed and the lands are officially returned to the jurisdiction of BLM. This agreement will remain in effect upon execution by the District Manager (BLM) and the Regional Director (Reclamation) until canceled or modified upon 30 days written notice by either agency. Amendments or modifications will be made with the concurrence of both parties.

V. Agency Actions Needed to Transfer Management of Lonesome Lake Area:

A. Filing of Relinquishment: RECLAMATION

B. Review of relinquished lands and acceptance of jurisdiction: BLM

C. Transfer/assumption or cancellation of special-use permits:
For the relinquished lands, Reclamation will provide a list of all current use authorizations and copies of those documents to the BLM district office. BLM will then review those authorizations and decide if existing Reclamation-issued special use permits will be transferred to BLM administration, canceled, or re-issued under other applicable authorities. These permits may include authorizations for grazing and farming, utility crossings, gravel pits, recreational use of land, or other activities.

D. Notification of termination/transfer of special-use permits:
Reclamation is responsible for coordinating notification to all holders of special-use permits on the relinquished land of BLM's decision on the disposition of their permits or other use authorizations. Notification shall be made within 90 days of the notice of relinquishment, or as established in the timetable in III above.

E. Revenues collected from relinquished lands:
All revenues collected from the relinquished lands, either from special use authorizations issued by Reclamation that BLM has assumed, or by use authorizations issued by BLM, will be collected by BLM and credited to the United States according to the appropriate federal regulations or as authorized by legislation.

F. Land Management:
BLM will assume responsibility for permitting or otherwise controlling all land management activities for relinquished lands within 90 days of receiving a notice of relinquishment from Reclamation.

VI. Principle Contacts

BLM Contact:
Jim Barnum
Havre Area Manager

Reclamation Contact:
Rick Blaskovich
Lands & Environmental Resources
Montana Area Office

VII. Required Clauses

During the performance of this agreement, the participants agree to abide by the terms of Executive Order 112456 on nondiscrimination and will not discriminate against any person because of race, color, religion, sex, or national origin.

No member or delegate to Congress, or resident Commissioner, shall be admitted to any share or part of this agreement or to any benefit arising from it. However, this clause does not apply to this agreement to the extent that this agreement is made with a corporation for the corporation's general benefit.

VII. Approval

The undersigned officials hereby agree to the terms of this Agreement in Principle and is effective upon the date of the last signature.

David L. Mari 8/30/94
District Manager (DATE)
Bureau of Land Management
Lewistown District Office

Fred Hunt 8/19/94
ACTING Regional Director (DATE)
Bureau of Reclamation
Great Plains Region

APPENDIX A

MTM-40568 - SO August 25, 1948

T. 29 N., R. 9 E.,	
sec. 9, E½SE¼;	80.00
sec. 19, lot 3.	39.01
T. 32 N., R. 14 E.,	
sec. 26, lots 4 and 5.	77.00

MTM-40614 - SO March 30, 1950

T. 29 N., R. 9 E.,	
sec. 31, NW¼SE¼.	40.00
T. 29 N., R. 11 E.,	
sec. 4, NE¼SE¼.	40.00
T. 29 N., R. 12 E.,	
sec. 24, SW¼SE¼;	40.00
sec. 25, NW¼NW¼.	40.00
T. 30 N., R. 12 E.,	
sec. 35, N½SE¼.	80.00

MTM-40633 SO - October 15, 1904

T. 29 N., R. 11 E.,	
sec. 3, E½SW¼;	80.00
sec. 9, SE¼;	160.00
sec. 10, E½, E½NW¼, SW¼NW¼, and SW¼;	600.00
sec. 11, W½, SW¼NE¼, and SE¼;	520.00
sec. 12, NW¼SW¼, and S½S½;	200.00
sec. 13, N½ and SW¼;	480.00
sec. 14, N½, N½SW¼, SE¼SW¼, W½SE¼, and SE¼SE¼;	560.00
sec. 15, all;	640.00
sec. 21, N½N½;	160.00
sec. 22, NW¼NW¼;	40.00
sec. 24, NE¼, E½NW¼, NW¼NW¼, and E½SE¼.	360.00
T. 29 N., R. 12 E.,	
sec. 1, lots 3 and 4, S½NW¼, and SW¼;	321.44
sec. 2, lots 1 to 4, inclusive, S½N½, and S½;	641.12
sec. 3, SE¼SW¼, SW¼SE¼, and E½SE¼;	160.00
sec. 7, lot 4, SE¼SW¼, and S½SE¼;	159.06
sec. 8, E½, E½W½, SW¼NW¼, and W½SW¼;	600.00
sec. 9, W½ and SE¼;	480.00
sec. 10, all;	640.00
sec. 11, all;	640.00
sec. 12, W½NW¼;	80.00
sec. 15, all;	640.00
sec. 17, N½, W½SW¼, SE¼SW¼, and NE¼SE¼;	480.00
sec. 18, lots 1, 3, and 4, E½, and E½W½;	597.50

sec. 19, lots 1 to 4, inclusive, E½W½, and E½;	637.64
sec. 20 N½, N½S½, SW¼SW¼, and SE¼SE¼;	560.00
sec. 21, N½, SW¼, N½SE¼, and SW¼SE¼;	600.00
sec. 22, all;	640.00
sec. 24, SE¼SE¼;	40.00
sec. 25, E½NE¼ and SW¼NE¼;	120.00
sec. 26, E½SW¼, SW¼SW¼, and N½SE¼;	200.00
sec. 27, N½NE¼, W½, and S½SE¼;	480.00
sec. 28, W½ and SE¼SE¼;	360.00
sec. 29, E½NE¼, E½NW¼, NW¼NW¼, E½SW¼, and SE¼;	440.00
sec. 30, lot 1, NE¼, NE¼NW¼, and E½SE¼;	319.68
sec. 31, E½NE¼ and NE¼SE¼;	120.00
sec. 32, N½NE¼, SW¼NW¼, N½SW¼, and SE¼;	360.00
sec. 33, N½, N½S½, and SW¼SW¼;	520.00
sec. 34, N½ and NW¼SW¼.	360.00
T. 30 N., R. 12 E.,	
sec. 35, S½SE¼.	80.00
T. 29 N., R. 13 E.,	
sec. 19, lot 4;	39.27
sec. 30, lots 1 and 2.	78.70

MTM-018087 - SO September 02, 1955

T. 28 N., R. 12 E.,	
sec. 4, lot 4.	28.71
T. 29 N., R. 12 E.,	
sec. 25, NE¼NW¼ and NW¼NE¼.	80.00
TOTAL	15662.13

Jim Barnum
U.S. Bureau of Land Management
P.O. Drawer 911
Havre MT 59501

John Kwiatkowski,
Deputy State Director
U.S. Bureau of Land Management
P.O. Box 36800
Billings MT 59107-6800

GP-150, MT-420, -422

Lonesome Lake Permittees

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Mr. Garland Nimmick
Rt. 1, Box 28
Box Elder MT 59521

Mr. Gary Geyer
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Bart Bitz Farms, Inc.
Rt. 1, Box 657
Big Sandy MT 59520

Kidd Brothers
PO Box 662
Big Sandy MT 59520

Christofferson Land and Cattle Co.
PO Box 649
Big Sandy MT 59520

Mr. Robert G. Hockett
Shombo Route, Box 306
Havre MT 59501

H.H. Bitz Land Company
c/o Goldstein Law Firm, P.C.
P.O. Box 706
Havre MT 59501

APPENDIX B
COORDINATED RESOURCE MANAGEMENT GROUP RECOMMENDATIONS

To maintain a functioning piece of short grass prairie.

Improve wildlife habitat and native range productivity while maintaining AUM's.

> Establish 10 year grazing leases with permittees to encourage their investment and involvement and to provide stability to their operation.
>
> Establish a weed control program for the Lonesome Lake area.
>
> Annually monitor the transects (Robel Pole and Daubenmire) established during the recent range condition survey to evaluate trends in residual cover and species composition.
>
> Increase overall productivity.
>
> Increase spring residual cover by managing for a goal of 25% - 35% of the acres in the Lonesome Lake core area for suitable residual cover on an annual basis.
>
> Increase plant diversity with an emphasis on shrubs and forbs.
>
> Decrease clubmoss on 50% of allowable acres in 10 years. Treatment of clubmoss to improve resource base for livestock forage and wildlife (prairie dependent).

Provide support for continued BLM management of public lands at Lonesome Lake and assist in amending the BLM's West Hiline RMP for the area.

> Complete withdrawal revocation process and designate the BLM as sole federal agency responsible for the management of the Lonesome Lake area.
>
> Continue to provide for mineral extraction in non-sensitive areas in accordance with BLM policy.
>
> Provide for continued CRM involvement in the future management of Lonesome Lake on an annual basis.
>
> BLM will make isolated tracts of public land available for disposal through sale or exchange.
>
> BLM will seek to consolidate federal ownership in the "Lonesome Lake core area" through purchase or exchange with willing sellers.
>
> Existing farm leases in the Lonesome Lake core area will be renewed subject to usual modifications. Farm leases will be reviewed in 2005. The long term goal of the BLM management is to phase out farming and restore to native prairie with minimal economic impact on current lessees.

Provide for protection and interpretation of cultural resources at Lonesome Lake.

Review all management actions which may impact cultural resources in accordance with the National Historic Preservation Act and ARPA and coordinate such activities with Montana State Historic Preservation Officer.

Develop interpretive sites (informational and directional signing) for cultural resources at Lonesome Lake to enhance the public's appreciation of the area.

Recreation management would provide opportunities for dispersed recreation activities such as hunting and wildlife viewing. Off-road vehicle use would be limited yearlong to designated roads and trails. Off-road travel for administration of a federal lease or permit would be granted, unless specifically prohibited. Camping would be permitted but limited to 14 days.

The cultural resources throughout the area would provide opportunities for interpretation and public education. The area would be promoted for public and scientific use which would include a demonstration area for local colleges and schools. Developments could include a self-guided walking path with interpretive signs for visitor information.

Develop strategies for providing access to handicapped individuals.

The Coordinated Resource Management Group agreed to be a subgroup of the Lewistown District Resource Advisory Council.

Signatures Approving CRM Goals:

Lochiel Edwards, Lonesome Prairie Protective Association
Alan Rollo, President, Montana Wildlife Federation
Ed Johns, Montana Wildlife Federation
George Engler, Upper Missouri Breaks Audubon
Bart Bitz
John Grass, Grass & Sons
Fred Finke, Big Sandy Conservation District
Nona Danreuther, Lonesome Prairie Protective Association
Keith Edwards
Gary Sullivan, US Fish & Wildlife Service
Gary Geyer, Geyer Farms Inc.
Al Rosgaard, Montana Department of Fish, Wildlife & Parks
Tom France, National Wildlife Federation
Dan Kidd

APPENDIX C
LONESOME LAKE FARM LEASES

Core Area

Contract No.	Acres	Legal Description
7-LM-60-L0229	160	T29N, R12E, Sec. 28, E1/2W1/2
8-LM-60-L0265	160	T29N, R12E, Sec. 7, Lot 4, SE1/4SW1/4, SW1/4SE1/4 T29N, R11E, Sec. 12, SE1/4SE1/4
8-LM-60-L0267	160	T29N, R12E, Sec. 9, E1/2W1/2
8-LM-60-L0268	160	T29N, R12E, Sec. 28, W1/2W1/2
8-LM-60-L0269	160	T29N, R12E, Sec. 21, N1/2N1/2
8-LM-60-L0270	160	T29N, R12E, Sec. 9, W1/2W1/2
8-LM-60-L0271	160	T29N, R12E, Sec. 29, E1/2E1/2
8-LM-60-L0272	160	T29N, R12E, Sec. 22, NW1/4
8-LM-60-L0273	160	T29N, R12E, Sec. 22, SW1/4
8-LM-60-L0274	160	T29N, R12E, Sec. 22, SE1/4
8-LM-60-L0275	160	T29N, R12E, Sec. 22, NE1/4
Total Acres	*1,760*	

Outside Core Area

Contract No.	Acres	Legal Description
7-LM-60-L0231	160	T30N, R12E, Sec. 35, SE1/4
7-LM-60-L0232	80	T32N, R14E, Sec. 26, Lots 4 & 5
8-LM-60-L0264	80	T29N, R9E, Sec. 9, E1/2SE1/4
8-LM-60-L0266	40	T29N, R11E, Sec. 22, NW1/4NW1/4
Total Acres	*360*	

APPENDIX D
OIL AND GAS RESOURCES

General Geology

The topography of the area consists of gently sloping hills underlain by ground moraine materials, typical of a glaciated terrain. Lonesome Lake lies in the pre-glacial ancestral Marias River channel as described by Alden (1932). The river was diverted southward into its present channel by the advancing Wisconsin Glaciation during the late Pleistocene.

A sequence of Cretaceous, Mesozoic and Paleozoic formations underlies the glacial materials in the area. The Cretaceous and Mesozoic formations in the region consist of a thick sequence of interbedded shales and sandstone deposited in continental and shallow marine environments. Carbonate sequences of limestone and dolomite make up the Paleozoic-aged sediments.

Historical Drilling Activities

There have been some 40 plus wells drilled in and adjacent to the Lonesome Lake area. Of these wells, four have tested commercial quantities of natural gas, but are currently shut-in. Approximately eight miles to the east of Lonesome Lake two additional gas wells have been drilled, these wells are also shut-in. Approximately 20 miles east, northeast of Lonesome Lake large gas reserves are being developed in several Units surrounding the Bears Paw Mountains. Nearly all of the production is from the Eagle sandstone with small amounts from the Judith River formation. The majority of the wells were drilled during the early 1970s with a few being drilled in the mid 1980s. This exploration burst coincided with the renewed interest in natural gas during the early seventies.

Occurrence Potential

As noted above, the Eagle sandstone and Judith River formation are the two primary reservoir rocks in the area. Although only three wells have been drilled within the Lonesome Lake study area, these three wells and all of the surrounding wells indicated the presence of both the Judith River and Eagle. In addition, reservoir rocks with commercial production quantities are found only 3 miles east northeast of the Lonesome Lake area. Accordingly, the potential for the occurrence of hydrocarbons, particularly natural gas, is considered high for the entire area.

Development Potential

Provided the lands are made available for lease and a discovery is made the exploration and development of the Lonesome Lake area and surrounding private lands is anticipated to be at a moderate level. The topography, reservoir depth and likely production amounts would allow rather easy and complete development of this area. The land classification is the only factor that could significantly alter the development potential of this area. Timing and distance limitations, if imposed on the drilling activities, would not significantly alter the development potential.

Reasonably Foreseeable Development Scenario

Reasonably Foreseeable Development

Based on the occurrence potential, development potential, and past drilling activities, if all of the Lonesome Lake area lands are made available for lease with standard terms, or timing and distance related stipulations, it is anticipated that three to five (3-5) wells could be drilled within the area over the next 10-15 years. A large increase in the demand or price for natural gas could significantly increase the number of exploratory wells. However, such an increase is not predicted by the Department of Energy, Energy Information Administration (1994). Only one of the wells is anticipated to be a producer.

All the production is assumed to be natural gas with little, if any, associated water. The producing well would likely be shut-in for the time being waiting for other producing wells to be drilled in the area. Pipelining activities would not occur until such time as sufficient proven reserves are discovered to warrant the cost of building a pipeline to market the gas.

Drilling and Production Activities

Actual drilling activities would disturb about 2 acres per well and would require less than a week to complete. Pipelining activities would require a similar timeframe to complete and disturbance would depend upon the pipeline length. Usually, a 50 foot right-of-way is granted, but the actual disturbed area is less than 10 feet.

Should significant gas discoveries be made, the maximum development density is anticipated at four (4) wells per section. In the remote likelihood that oil is discovered, the density could be as high as one well per 40 acres. For oil, production activities would require one visit per well site per day for inspection purposes. Transportation of the oil by truck would require additional trips, probably one per week at the most. For natural gas, production activities would require one visit per well per day at the maximum and one visit per well per month at the minimum. Produced water for either type of production would be disposed of in a fenced, surface pit.

Bibliography

Alden, W. C., 1932, Physiography and glacial geology of Eastern Montana and adjacent areas: U.S. Geological Survey Professional Paper 174.

________, Annual Energy Outlook 1994, January 1994: Energy Information Administration, Department of Energy.

OIL AND GAS LEASE STIPULATIONS
STANDARD STIPULATIONS
ALTERNATIVES 1 and 2

UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Land Management
222 North 32nd Street
P.O. Box 36800
Billings, Montana 59107

(Serial Number)

OIL AND GAS LEASE STIPULATIONS

ESTHETICS—To maintain esthetic values, all surface-disturbing activities, semipermanent and permanent facilities may require special design including location, painting and camouflage to blend with the natural surroundings and meet the intent of the visual quality objectives of the Federal Surface Managing Agency (SMA).

EROSION CONTROL—Surface-disturbing activities may be prohibited during muddy and/or wet soil periods.

CONTROLLED OR LIMITED SURFACE USE STIPULATION—This stipulation may be modified, consistent with land use documents, when specifically approved in writing by the Bureau of Land Management (BLM) with concurrence of the SMA. Distances and/or time periods may be made less restrictive depending on the actual onground conditions. The prospective lessee should contact the SMA for more specific locations and information regarding the restrictive nature of this stipulation.

The lessee/operator is given notice that the lands within this lease may include special areas and that such areas may contain special values, may be needed for special purposes, or may require special attention to prevent damage to surface and/or other resources. Possible special areas are identified below. Any surface use or occupancy within such special areas will be strictly controlled, or if absolutely necessary, excluded. Use or occupancy will be restricted only when the BLM and/or the SMA demonstrates the restriction necessary for the protection of such special areas and existing or planned uses. Appropriate modifications to imposed restrictions will be made for the maintenance and operations of producing oil and gas wells.

After the SMA has been advised of specific proposed surface use or occupancy on the leased lands, and on request of the lessee/operator, the Agency will furnish further data on any special areas which may include:

> 100 feet from the edge of the rights-of-way from highways, designated county roads and appropriate federally-owned or controlled roads and recreation trails.
>
> 500 feet, or when necessary, within the 25-year flood plain from reservoirs, lakes, and ponds and intermittent, ephemeral or small perennial streams; 1,000 feet, or when necessary, within the 100-year flood plain from larger perennial streams, rivers, and domestic water supplies.
>
> 500 feet from grouse strutting grounds. Special care to avoid nesting areas associated with strutting grounds will be necessary during the period from March 1 to June 30. One-fourth mile from identified essential habitat of state and federal sensitive species. Crucial wildlife winter ranges during the period from December 1 to May 15, and in elk calving areas, during the period from May 1 to June 30.
>
> 300 feet from occupied buildings, developed recreational areas, undeveloped recreational areas receiving concentrated public use and sites eligible for or designated as National Register sites.
>
> Seasonal road closures, roads for special uses, specified roads during heavy traffic periods and on areas having restrictive off-road vehicle designations.
>
> On slopes over 30 percent, or 20 percent on extremely erodable or slumping soils.

(Date)

(Signature)

See Notice On Back

NOTICE

APPLICATIONS FOR PERMIT TO DRILL (APDs)—The BLM district or resource area offices are responsible for the receipt, processing, and approval of APDs. The APDs are to be submitted by oil and gas operators pursuant to the requirements found in Onshore Oil and Gas Order No. 1 — Approval of Operations on Onshore Federal and Indian Oil and Gas Leases (Circular No. 2538). Additional requirements for the conduct of oil and gas operations on federal oil and gas leases can be found in Code of Federal Regulations Title 43, Part 3160. Copies of Onshore Oil and Gas Order No. 1, and pertinent regulations, can be obtained from the BLM district offices in which the operations are proposed. Early coordination with these offices on proposals is encouraged.

CULTURAL AND PALEONTOLOGICAL RESOURCES—The SMA is responsible for assuring that the leased lands are examined to determine if cultural resources are present and to specify mitigation measures. Prior to undertaking any surface-disturbing activities on the lands covered by this lease, the lessee or operator, unless notified to the contrary by the SMA, shall:

1. Contact the appropriate SMA to determine if a site-specific cultural resource inventory is required. If an inventory is required, then;

2. Engage the services of a cultural resource specialist acceptable to the SMA to conduct a cultural resource inventory of the area of proposed surface disturbance. The operator may elect to inventory an area larger than the area of proposed disturbance to cover possible site relocation which may result from environmental or other considerations. An acceptable inventory report is to be submitted to the SMA for review and approval no later than that time when an otherwise complete application for approval of drilling or subsequent surface-disturbing operation is submitted.

3. Implement mitigation measures required by the SMA. Mitigation may include the relocation of proposed lease-related activities or other protective measures such as testing salvage and recordation. Where impacts to cultural resources cannot be mitigated to the satisfaction of the SMA, surface occupancy on that area must be prohibited.

The lessee or operator shall immediately bring to the attention of the SMA any cultural or paleontological resources discovered as a result of approved operations under this lease, and not disturb such discoveries until directed to proceed by the SMA.

ENDANGERED OR THREATENED SPECIES—The SMA is responsible for assuring that the leased land is examined prior to undertaking any surface-disturbing activities to determine effects upon any plant or animal species, listed or proposed for listing as endangered or threatened, or their habitats. The findings of this examination may result in some restrictions to the operator's plans or even disallow use and occupancy that would be in violation of the Endangered Species Act of 1973 by detrimentally affecting endangered or threatened species or their habitats.

The lessee/operator may, unless notified by the authorized officer of the SMA that the examination is not necessary, conduct the examination on the leased lands at his discretion and cost. This examination must be done by or under the supervision of a qualified resources specialist approved by the SMA. An acceptable report must be provided to the SMA identifying the anticipated effects of a proposed action on endangered or threatened species or their habitats.

OIL AND GAS LEASE STIPULATIONS
SPECIAL STIPULATIONS
ALTERNATIVE 2

NO SURFACE OCCUPANCY

Resource: Riparian/Hydrology

Stipulation: Surface occupancy and use is prohibited within riparian areas, water bodies and ephemeral wetlands.

Objective: To protect riparian and wetland vegetation important to wildlife species migration, nesting and breeding, reduce erosion adjacent to water courses and protect reservoirs.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The area affected by this stipulation may be modified by the authorized officer if it is determined that portions of the area do not include riparian/wetland areas, flood plains, or water bodies.

Waiver: This stipulation may be waived by the authorized officer if it is determined that the entire leasehold does not include riparian/wetland areas, flood plains or water bodies.

CONTROLLED SURFACE USE

Resource: Wildlife - Swift Fox

Stipulation: Surface occupancy or use is subject to the following special operating constraints. The area of a lease proposed for operations will be inventoried at the time of proposed drilling to determine if den sites are in the area. Operations would be required to relocate up to 1/2 mile if a den site is found.

Objective: Protection of den sites for swift fox, a species of special concern and a candidate species.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The area affected by this stipulation may be modified by the authorized officer if it is determined that portions of the area do not include suitable habitat.

Waiver: This stipulation may be waived by the authorized officer if it is determined that the entire leasehold does not include suitable habitat.

NO SURFACE OCCUPANCY

Resource: Wildlife - Ferruginous Hawk

Stipulation: Surface occupancy and use is prohibited within 1/2 mile of known ferruginous hawk nest sites which have been active within the past 2 years.

Objective: To maintain the production potential of ferruginous hawk nest sites which are very sensitive to disturbance.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan which demonstrates that the impacts from the proposed action are acceptable or can be adequately mitigated. Seasonal exceptions may be allowed from August 1 through March 1 (the nonbreeding season) if the authorized officer determines that the proposed activity will not disturb the production potential of ferruginous hawk nest sites.

Modification: The boundaries of the stipulated areas may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting the production potential of ferruginous hawk nest sites.

Waiver: This stipulation may be waived if the authorized officer determines that all designated sites or areas within the leasehold can be occupied without adversely affecting the production potential of ferruginous hawk nest sites.

TIMING

Resource: Wildlife - Grouse Leks

Stipulation: Surface occupancy and use is prohibited within 1/4 mile of grouse leks from March 15 to June 15.

Objective: To protect sharptail and sage grouse lek sites necessary for the long-term maintenance of grouse populations in the area.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan which demonstrates that the impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the stipulated areas may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting grouse lek sites.

Waiver: This stipulation may be waived if the authorized officer determines that the entire leasehold can be occupied without adversely affecting grouse lek sites, or if all lek sites within 1/4 mile of the leasehold have not been used for 5 consecutive years.

NO SURFACE OCCUPANCY

Resource: Cultural Resources

Stipulation: Surface occupancy and use is prohibited within sites or areas designated for conservation use, public use or sociocultural use.

Objective: To protect those cultural properties identified for conservation use, public use and sociocultural use (see definitions for use categories within BLM Manual 8111).

Exception: An exception to this stipulation may be granted by the authorized officer if the lessee or operator submits a plan which demonstrates that the cultural resource values which formed the basis for designation are not affected, or if adverse impacts are acceptable or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the designated site or area can be occupied without adversely affecting the cultural resource values for which the site or area was designated.

Waiver: This stipulation may be waived if the authorized officer determines that all designated sites or areas within the leasehold can be occupied without adversely affecting the cultural resource values for which such sites or areas were designated, or if all designated sites or areas within the leasehold are allocated for other uses.

Note: Compliance with Section 106 of the National Historic Preservation Act is required for all actions which may affect cultural properties eligible to the National Register of Historic Places.

TIMING

Resource: Wildlife - Raptor Nests

Stipulation: Surface use is prohibited from March 1 to August 1 within 1/2 mile of raptor nest sites which have been active within the past 2 years. This stipulation does not apply to the operation and maintenance of production facilities.

Objective: To protect nest sites of raptors which are federally protected.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area no longer are within 1/2 mile of raptor nest sites which have been active within the past 2 years. The dates for the timing restriction may be modified if new information indicates that the March 1 to August 1 dates are not valid for the leasehold.

Waiver: This stipulation may be waived if the authorized officer determines that the entire leasehold no longer is within 1/2 mile of raptor nest sites which have been active within the past 2 years.

TIMING

Resource: Wildlife - Grouse Nesting Zone

Stipulation: Surface use is prohibited from March 1 to June 15 in grouse nesting habitat within 2 miles of a lek. This stipulation does not apply to the operation and maintenance of production facilities.

Objective: To protect sharptail and sage grouse nesting habitat from disturbance during spring and early summer in order to maximize annual production of young and to protect nesting activities adjacent to nesting sites for the long-term maintenance of grouse populations in the area.

Exception: An exception to this stipulation may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the stipulated area may be modified if the authorized officer determines that portions of the area no longer contain grouse nesting habitat within 2 miles of a lek. The dates for the timing restriction may be modified if new information indicates that the March 1 to June 15 dates are not valid for the leasehold.

Waiver: This stipulation may be waived if the authorized officer determines that the entire leasehold no longer contains grouse nesting habitat within 2 miles of a lek.

APPENDIX E
RECORD OF EVENTS AND PUBLIC INVOLVEMENT

Date	Action
1902	Bureau of Reclamation withdraws public domain at Lonesome Lake to serve as a reservoir for the Lower Marias Project.
1986	US and Canada sign North American Waterfowl Management Plan. The plan recommended using "joint ventures" as a means for government agencies and private organizations to cooperate in habitat projects. In the US, the Prairie Pothole region was identified as a priority habitat area.
August 1991	Cooperating agencies submitted plan for developing waterfowl habitat at Lonesome Lake. This was described in the Lonesome Lake Prairie Wetland Project Prospectus. Lonesome Lake was identified as the core area.
April 1992	Meeting was held with grazing and farming lessees to discuss aspects of the Lonesome Lake study, including phasing out farming permits, water control dikes, development of allotment management plans and resource interpretive site plans.
July 1992	Public meeting held in Big Sandy to identify issues for environmental assessment.
April 1993	Meeting held with grazing and farming lessees to update the environmental assessment process.
April 1993	National Wildlife Federation sponsors a tour of Lonesome Lake.
April 1993	National Wildlife Federation prepares resolution proposing the Lonesome Lake area be established as a National Wildlife Refuge.
April 1993	Memorandum of Understanding among Department of Fish, Wildlife & Parks, Bureau of Land Management, Bureau of Reclamation and Fish & Wildlife Service to establish guidelines for interagency cooperation for management of Lonesome Lake Project area.
June 1993	Ducks Unlimited completed study concluding that it was not hydrologically feasible nor economically justifiable to build dikes to increase depth and duration of surface water at Lonesome Lake.
April 1994	Meeting called by Big Sandy Conservation District with representatives from Senator Burns and Baucus's staff to hear testimony from lessees about management of area.
April 1994	Meeting initiated by Montana Wildlife Federation, held at the Big Sandy Conservation District office, to discuss resolutions from National Wildlife Federation and Montana Audubon Society.
August 1994	Process of revocating withdrawal begins with interim agreement transferring administration of all public lands at Lonesome Lake to Bureau of Land Management.
August 1994	Notice of Intent issued to amend the West Hiline Resource Management Plan.
August 1994	Meeting held with grazing and farming lessees to discuss 2-year extension of farming leases and update environmental assessment process.
November 1994	Draft Environmental Assessment and West Hiline RMP amendment issued for public comment.
November 1994	Chouteau county commissioners briefed on draft EA.

December 1994	Public meetings held at Big Sandy and Great Falls to comment on draft EA.
January 1995	BLM issues 4th alternative to everyone on mailing list.
April 1995	First meeting of CRM group.
May 1995	CRM group meeting.
June 1995	CRM group meeting.
July 1995	CRM group meeting.
September 1995	Final CRM group meeting before draft ea comment period ends.
October 1995	End of comment period for draft EA.

APPENDIX F
MAILING LIST

COUNTY

Chouteau County Commissioners
Chouteau County Conservation District
Hill County Commissioners

STATE OF MONTANA

Department of Agriculture
Departmemt of Fish, Wildlife & Parks
Department of Natural Resources and Conservation
Historic Preservation Office

CONGRESSIONAL

Honorable Max Baucus
Honorable Conrad Burns
Honorable Pat Williams

FEDERAL

Federal Energy Regulatory Commission
Bureau of Reclamation
Fish and Wildlife Service
Soil Conservation Service

TRIBAL COUNCILS AND COMMITTEES

Fort Belknap Indian Reservation
Rocky Boy Cultural Committee

ORGANIZATIONS

American Wildlands
Montana Audubon Council
Upper Missouri Breaks Audubon Society
Last Chance Audubon
Big Sky Carvers
Big Sky Upland Bird Association
Billings Rod and Gun Club
Big Sandy Conservation District
Chouteau County Pheasants Forever
Defenders of Wildlife
Ducks Unlimited
Havre Chapter Ducks Unlimited
The Ecology Center
Gallatin Wildlife Association
Glacier Two Medicine Alliance
Hiline Sportsmens Club
Ihmsen Well Association
Independent Petroleum Association of Mountain States
Madison Gallatin Alliance
Medicine River Canoe Club
Missouri Headwaters Gun Dog Club
Montana Farm Bureau
Montana Native Plant Society
Montana Natural Heritage Program
Montana Oil Journal
Montana Salinity Control Association
Montana State Univeristy
Island Range Chapter Montana Wilderness Association
Montana Wildlife Federation
National Wildlife Federation
The Nature Conservancy
North Central Pheasants Forever
North Marias Landowner/Sportsman Assoc
Northern Montana Oil & Gas Association
Rocky Mountain Oil and Gas Association
Rocky Mountain Overthrust Energy Foundation
Russell Country Sportsmans Association
Yellowstone Basin Group Sierra Club
Sierra Club
Southeastern Montana Sportsmen Assoc
University of Montana
Upper Missouri Trust
Western Montana College
Wildlife Refuge Reform Coalition
Montana Chapter Wildlife Society

BUSINESSES

Altamont Gas Transmission Company
Bear Paw Sentinel
Bearpaw Development Corporation of Northern Montana
Big Sandy Spraying Service
Centennial Mills
Christopherson Land and Cattle
Cornpatch Cottage
Courtnage and Son
Express Pipeline Inc
Grass & Sons Inc
Integrated Golf Services
Meridian Oil Inc
Weed Management Services
Western Technology and Engineering Inc

INDIVIDUALS

Margaret E Adams
Burke Allen
Charles D Allen
April Allingham
Barbara Allingham
Robert A Honig
Virginia E Atkins
Alice H Austin
Stanley Austin
Ernest Bahnmiller
Tim Bahnmiller
Jewell Bainmiller
Floyd Ball
Robert Ballou
Steve Barrett
Stephen Barton
John Beall
Van Barron
Henry E Beers
Kathi M Beley
Dan Bennett
Ron Bennett
John Berger
Ralph Berry
Bart Bitz
Dorothy Bitz
Fred Bitz
Larry Bitz
Leo Bitz
Ronald Bitz
Sam Bitz
Zana Bitz
Aaron Boehm
Robert Boettcher
S Boettcher
Jim Booth
Barbara Bowlen
Glenn Brawn
Richard Breuner
R T Brewer
John R Bross
Don Brown
William Brown
Bob Bullers
Charles Burch Jr
Allen Burke
E C Butler
Ronald W Butler
Caroline Byrd
Jim Caird
George Carson
Dave Carty
Jerry Cashman
Darrell Chauvet
Scott Chauvet
Max Cluirter
Charles Coe
Ferne Cohen
Susan Colvin
Pat Connell
Stanley D Cook
Sam Curtis
Page Dabney
Charles Danreuther
Keith Danreuther
Russ and Nona Danruether
Pam Davidson
Rich Day
Roger Debruycker
Ben Deeble
Jim H Delano
Donna Demetriades
Russell Dion
Clay Dixon
Edward Dixon
Russell Dixon
Donald Dodge
Steve Doherty
J Michael Driscoll
Bryan Dunn
Robert Durocher
Howard M Dyrland
Greg Edelen
Craig Edwards
Larry Edwards
Lochiel Edwards
Ken Engellant
George Engler
Paul English
George Erickson
Tom Everson
Frank Falen
Mary Fay
Fred Finke
Robert Finke
Stan Klimas
Bebe Fitzgerald
Charlie Foussard
Stan Frasier
Ralph Fries
Bill Gardner
Mark Gasvoda
Dan Gebhardt
Brooks Gehright
Walter E Genereux
Ed Gerrity
Ernest Geyer
Gary Geyer
Sharon Geyer
David Goldan
Mark Good
Dan Graney
Lionell Grass
Terry Grass
Lawrence Green
Knud Grosen
George and Shirley Hagar
Hall and Hall
William Handl
Dale Hankins
Kurtis C Hansen
Pat Harlin
Karen Harrison
Bill Heckerman
Brad Heckerman
Ward Hecock
Dan Heinz
Gracia A Hilde
Ducan Hill
Glen Hockett
Jeff Hockett
Robert Hockett
Fred Horning
George Horse Capture Jr
Mac Hunter
Lenard Jappe
Phillip Jaquith
Chuck Jareki
Dave Jarrett
Loren Jenkins
Gerry Jennings
Dallas Johannsen
Ed Johns
Gene Johnson
Glen Johnston
Cedron Jones
Sara Taubman
Jack Jones
Anne K Katsaris
Dennis Kavanagh
Harvey Keller
Ina R Kelly
Kidd Brothers
Dan Kidd
Donald C Kidd
Tom and Judy Kilmer
Dave King
Mitch King
Stan Klimas
Peggy Koale
Jeanne Kolis
Dale Krause
Marvin and Carole Krook
Glen Kulbeck
Marshall Kulbeck Jr
Joe Lamson
Arlie J Lane
Jack Larmoyeux
Alan Larson
Chris Larson
Goni Lauckner
Dick Leblond
Robert D Liston
Ted Lofstrom
Robert C Lucas
Frank Lyons
Richard J Mackie
Thomas J Maguire
David Majors
Jack Marshall
Everett Maxwell
Gary Maxwell
George McCabe
Carley McCaulay
Jim McCollum
Jim McDermand
Terry Mceneaney
Peter McGee
Tom McGuane
John McKenna
Chris Mehus
Angus Merrill
Larry Michnevich
Robert Milner
Bill Mitchell
Rick Morris
John Mumma
Frank Munshower
Tom Mussehl
Art Musson
Art Neill
Robert Neill
Bob Nelson
Garland Nimmick
Emitt Northup
Jennifer O'Loughlin
Ed Olderdice
Ken Olson
Lyle Ophus
Shane Ophus
C Ostrom
Mark Ostrom
Allan Otto
Ronald Otto
Tim Owen
Grant Parker
Herb Pasha
Dave & Diane Pauli

Sharon Pavlovick
Allan Pearson
Ray Peck
Jeffrey Noel Pence
Bruce Peterson
Julius Peterson
James Phelps
Randy and Dorothy Poulsen
Edwin F Prach
Datus Proper
Gerald W Ray
Jim Ray
Sue Reed
Dan Regan
Janis Reichelt
Verlin Reichelt
Alfred Rice
George Rice
Jack Riesselman
Dave Ripley
Dave Corcoran
Roy A Robertson
Sam Robinson
Brian Rogers
Bill Roney
John Roylance
Ruth Rudner
Roy Runnion
Gerald Rutledge
Marian J Setter
Jim Seykora
Jeff M Sillick
Muriel Silvan
Pat Simmons
Dale L Skaalure
Dan Skaar
Arlo & Darlene J Skari
Charles Slater
Bill Smoot
Donald D Snow
Ordean Solberg
Kathy Sparr
Dale C Spartus
Rex and Karyn Spear
Volney Steele
Larry Sterrett
Howard Strause
Sil Strung
Robert L Swanson
Shannon Taylor
Roger Terry
Jon Tester
Allen G Thompson
Dick Timmerman
Kim Tiplady
Charles and Glenda Tonne
Charles Tordik
Gayle Trusler
Vernon Turk
Floyd Vallie
David Van Tighem
D W Vanhyning
David Vantishem
Clyde G Webster
John Weigand
Jack Weis
Gene Welty
Pat Welty
Jeff Wetmore
Becky Williams
Brent Williams
Byron Williams
Steve Williamson
Kent Wilson
Joseph A Wirak
John Witt
Lloyd Wolery
Carol Works
Dan Works
Merwin Works
George Wuerthner
Ray Young
Bill Zacher

Dale C[illegible]
Bill and Kay [illegible]
Sidney Slade
Larry Morton
Don and Irma [illegible]
Sid Strong
Robert L. Sturgeon
Sherman T[illegible]
Roger [illegible]
Joe T[illegible]
[illegible] D Thompson
Dick Thompson
Kim Thompson
Charles and C[illegible] Tipton
Charles Tuttle
Phyllis [illegible]
Virginia [illegible]
[illegible] Vance
Steven Van Tilburg
D W Van Vleck
David Vande[illegible]
[illegible]
[illegible]

Steven Ph[illegible]
Allen Plummer
Ray Pool
Jeffrey Neal [illegible]
Bruce [illegible]
[illegible]
James Phelps
Randy and Deborah [illegible]
[illegible]
[illegible]

APPENDIX G
ORGANIZATIONS AND INDIVIDUALS COMMENTING ON THE DRAFT EA

During the comment analysis process, all comments were categorized and coded into seven areas of concern. These broad categories are listed below. Each comment from the public meetings and letters that required a response were numbered to correspond with the appropriate comment/response number.

Category
Economics
Recreation
Other
Waterfowl/Water
Vegetation
Farming/Grazing
Alternatives

The following table contains the organization and/or name of those individuals commenting on the *draft EA* and corresponding comment/response number(s). The comments and response are included in Chapter 5. Those letters not requiring a response are not listed in the table.

Letter #	Organization/Individual	Comment Code(s)
2	Bear Paw Development Corporation	E3
3	Big Sandy Conservation District	O2
4	William Brown	E5, R2, O3, W1
5	Conrad Burns	E7, O4, O5, O6, W2, W3
6	John Witt	E5, R3, O7, W2, W4, V1
8	Hill County Commissioners	E5, R4
9	Max Baucus	O8, F1
10	Dave & Dan Kidd	E9, E10, O9, O10, O11, O12, O13, O57, V3, V4,F2
11	Emitt Northup	A2
12	Bill Zacher	A3
17	Carley McCaulay	A2
18	Dave Ripley	O15, O16, W2, F2
20	Gene Johnson	F2, A4
21	David Majors	A3, A4
23	AEC Pipelines	O17

24	Joe Gutkoski	A3, A5
25	Donald Courtnage	W2, F2
26	Floyd Vallie	O4, W2
28	Robert Ballou	F3, F4, A3, A5
30	P. Brian Rogers	A3, A5
31	David Rusoff	A3, A5
32	Billings Rod & Gun Club	O8, W8
33	Stan Frasier	F2, F5, A3, A5
34	Marian Setter	O22, W2, A3
35	Byron Williams	A3, A5
36	Department of Fish Wildlife & Parks (Patrick Graham, Director)	F2, F6, A7, A8
37	Bob Bullers	A2, A5
38	Southeastern Montana Sportsmen Association	A2
39	Pat Simmons	F7, A3
40	Robert Boettcher	O11
41	Signe Boettcher	W2
42	Robert Lucas	O57, F3, A3, A5
44	Ihmsen Well Association	O9, W28
45	Merwin Works	O4
46	Carol Works	O56, W2, W18
47	Glenn Hockett	O24, V5, A2
48	Robert Finke	W2, V4, F2, A9, A10
49	Charles Griffith	A4
50	Bill Gadner & Anne Lews	W8, V7
51	Integrated Golf Services	A5
52	Mac Hunter	A3, A5
53	Charles Tordik	A4, A5

54	Virginia Edwards	E9, R3, W2, A4, A5
55	Jeanne Kolis	A3
56	Upper Missouri Trust (Craig Knowles)	024, 025, 027, 028, F5, A12
57	Arlie Lane	W2, A2
58	Mark Ostrom	04, W2
59	Rod & Elaine Courtnage	R3, 029, W2, F2
60	William Roven	W13
61	Joseph A. Wirak	F7
62	Laura Lee Edwards	W4
63	Paul & Bess English	058
65	C.D. Allen	E20, A2
67	James Booth	A3, A5
68	Art Musson	A2
69	Charles Slater	A3, A5
70	Lawrence Green	E5, O4
71	Gracia Hilde	A2, A5
73	Frank Munshower	E10
76	Carla & Raymond Courtnage	R3, W2
77	Jack Riesselman	W15, V4, F3, F13
78	Donald C. Kidd	E9, O9, O10, O11, O12, O57, V3, V4
79	Ina R. Kelly	E9, E10, O9, O10, O11, O12, O57, V3, V4
80	Craig Edwards	E15, O2, O9, O30, W3, W16, V10
81	W. Bryan Dunn	057, A4
82	George Wuerthner	A4
83	Dale Skaalure	O5, W2, A23
85	Medicine River Canoe Club	W8, A4
87	Lochiel Edwards	E16, E17, W2, W18, V3, F9
89	Ralph Fries	V23, A2, A5

90	Russell Country Sportsmans Association	W8
91	Sara Toubman & Cedron Jones	A3
92	Donald Snow	A2
93	Jeff Sillick	A2, A5
94	Beatrice Fitzgerald	A2
95	Sharon Geyer	E7, O4, O6, W2, W3
96	Julius Peterson	E7, O4, O6, W2, W3
97	Susan Colvin	A2
98	Chris Dixon	E7, O4, O6, W2, W3
99	Muriel Silvan	W2
100	Glen Kulbeck	E7, O4, O6, W2, W3
101	Gary Geyer	O4, O6, W2, W3
103	Randy & Dorothy Poulsen	W8, A2
104	Sil Strung	A3, A5
105	Allen Thompson	F7, A2
106	Charles Foussard	E7, O4, O6, W2, W3
107	Roy Robertson	E7, O4, O6, W2, W3
108	Ronald Butte	E7, O4, O6, W2, W3
109	Kurtis Hansen	E7, O4, O6, W2, W3
110	Centennial Mills	E7, O4, O6, W2, W3
111	Edward Dixon	E7, O4, O6, W2, W3
112	C.K.	E7, O4, O6, W2, W3
113	James Ray	E7, O4, O6, W2, W3
114	Ward Hicock	E7, O4, O6, W2, W3
115	Jack __________	E7, O4, O6, W2, W3
116	Vernon Turk	E7, O4, O6, W2, W3
117	Leonard Jappe	E7, O4, O6, W2, W3
118	O. Solberg	E7, O4, O6, W2, W3

119	Jennifer O'Loughlin	A2
120	Yellowstone Valley Chapter Audubon Society (Dr. John R. Bross)	O31, O32, W21, W22,A14, A15
121	Max Clawiter	O2, W3
122	Keith Edwards	R4, O33, W2, W3
123	Montana Stockgrowers Association	O4, O34, W2, W3, W24
124	Gerald Ray	E7, O4, O6, W2, W3
125	Henry Beers	E7, O4, O6, W2, W3
126	Tim Bahnmiller	E7, O4, O6, W2, W3
127	Zana Bitz	E7, O4, O6, W2, W3
128	Larry Sterrett	E7, O4, O6, W2, W3
129	Ernest Geyer	E7, O4, O6, W2, W3
130	Galen Bitz	E7, O4, O6, W2, W3
131	Allan Otto	E7, O4, O6, W2, W3
132	Ronald Otto	E7, O4, O6, W2, W3
133	Robert Swanson	O35, W2
134	Terry Jennings	A2
135	Harriet Marble	O36, W2, A3
136	Bob Nelson	R4, O38, V12, V13, V14, V16, V17, F16, F17, F19, F20
137	Shirley Kulbeck	E7, O4, O6, W2, W3
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